

Brain Teaser No : 00765

Three men, including Gianni and three woman, including Sachi are in line at the BrentWood post office. Each has two different pieces of business to conduct.

1. The first person is a woman.
 2. Carlos wants to send an overnight package.
 3. Lau is just ahead of Pimentelli who is the same sex as Lau.
 4. Gianni is two places ahead of the person who wants to buy stamps.
 5. Knutson - who is the opposite sex than Rendler - isn't the person who wanted to complain about a mail carrier.
 6. The six people, not necessarily in the same order are - Anthony, Donna, the person who wants to fill out a change-of-address form, the one who wants to buy a money order, the one who wants to send Airmail to Tibet and the second person in the line.
 7. The four tasks of the last two people in line, not necessarily in the same order are - sending books fourth class, buying a money order, picking up a package and complaining about a mail carrier.
 8. The person who wants to send books fourth class is just behind a person of the same sex.
 9. Mary is just behind a person who wants to send an insured package.
 10. The person who wants to send Airmail to Tibet is either two places ahead of or two places behind the one who wants to add postage to his or her meter.
 11. Anthony isn't two places behind the who wants to pickup a registered letter.
 12. Toriseza is two places ahead of the person who wants to pick up a package.
 13. Knutson isn't just ahead of the person who wants to send an item parcel post.
- Can you figure out where each customer is in the line, his or her full name (one surname is Loti) and the two things he or she wants to accomplish? Provide your answer in POSITION - FIRST NAME - LAST NAME - BUSINESS format.
A very TOUGH puzzle !!!

POS	FIRST NAME	LAST NAME	BUSINESS
1	Sachi	Loti	Fill Out a Change-of-Address Form Add Postage to Meter
2	Gianni	Lau	Pick Up a Registered Letter Send an Item Parcel Post
3	Carlos	Pimentelli	Overnight Package Send Airmail to Tibet
4	Donna	Toriseza	Buy Stamps Send an Insured Package
5	Mary	Knutson	Buy a Money Order Send Books fourth Class
6	Anthony	Rendler	Complain About a Mail Carrier Pick Up a Package

Brain Teaser No : 00250

There is a 50m long army platoon marching ahead. The last person in the platoon wants to give a letter to the first person leading the platoon. So while the platoon is marching he runs ahead, reaches the first person and hands over the letter to him and without stopping he runs and comes back to his original position. In the mean time the whole platoon has moved ahead by 50m. The question is how much distance did the last person cover in that time. Assuming that he ran the whole distance with uniform speed.
Submitted by : manojaba

Answer

The last person covered 120.71 meters.
It is given that the platoon and the last person moved with uniform speed. Also, they both moved for the identical amount of time. Hence, the ratio of the distance they covered - while person moving forward and backward - are equal.

Let's assume that when the last person reached the first person, the platoon moved X meters forward.

Thus, while moving forward the last person moved (50+X) meters whereas the platoon moved X meters.

Similarly, while moving back the last person moved [50-(50-X)] X meters whereas the platoon moved (50-X) meters.

Now, as the ratios are equal,

$$(50+X)/X = X/(50-X)$$

$$(50+X)*(50-X) = X*X$$

Solving, X=35.355 meters

Thus, total distance covered by the last person

$$= (50+X) + X$$

$$= 2*X + 50$$

$$= 2*(35.355) + 50$$

$$= 120.71 \text{ meters}$$

Note that at first glance, one might think that the total distance covered by the last person is 100 meters, as he ran the total length of the platoon (50 meters) twice. TRUE, but that's the relative distance covered by the last person i.e. assuming that the platoon is stationary.

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A contractor had employed 100 labourers for a flyover construction task. He did not allow any woman to work without her husband. Also, at least half the men working came with their wives.

He paid five rupees per day to each man, four rupees to each woman and one rupee to each child. He gave out 200 rupees every evening.

How many men, women and children were working with the constructor?

Answer

16 men, 12 women and 72 children were working with the constructor.

Let's assume that there were X men, Y women and Z children working with the constructor.

Hence,

$$X + Y + Z = 100$$

$$5X + 4Y + Z = 200$$

Eliminating X and Y in turn from these equations, we get

$$X = 3Z - 200$$

$$Y = 300 - 4Z$$

As if woman works, her husband also works and at least half the men working came with their wives; the value of Y lies between X and X/2. Substituting these limiting values in equations, we get

if $Y = X$,

$$300 - 4Z = 3Z - 200$$

$$7Z = 500$$

$$Z = 500/7 \text{ i.e. } 71.428$$

if $Y = X/2$,

$$300 - 4Z = (3Z - 200)/2$$

$$600 - 8Z = 3Z - 200$$

$$11Z = 800$$

$$Z = 800/11 \text{ i.e. } 72.727$$

But Z must be an integer, hence Z=72. Also, X=16 and Y=12

There were 16 men, 12 women and 72 children working with the constructor.

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Brain Teaser No : 00438

Four friends - Arjan, Bhuvan, Guran and Lakha were comparing the number of sheep that they owned.

It was found that Guran had ten more sheep than Lakha.

If Arjan gave one-third to Bhuvan, and Bhuvan gave a quarter of what he then held to Guran, who then passed on a fifth of his holding to Lakha, they would all have an equal number of sheep.

How many sheep did each of them possess? Give the minimal possible answer.

Answer

Arjan, Bhuvan, Guran and Lakha had 90, 50, 55 and 45 sheep respectively.

Assume that Arjan, Bhuvan, Guran and Lakha had A, B, G and L sheep respectively. As it is given that at the end each would have an equal number of sheep, comparing the final numbers from the above table.

Arjan's sheep = Bhuvan's sheep

$$2A/3 = A/4 + 3B/4$$

$$8A = 3A + 9B$$

$$5A = 9B$$

Arjan's sheep = Guran's sheep

$$2A/3 = A/15 + B/5 + 4G/5$$

$$2A/3 = A/15 + A/9 + 4G/5 \text{ (as } B=5A/9)$$

$$30A = 3A + 5A + 36G$$

$$22A = 36G$$

$$11A = 18G$$

Arjan's sheep = Lakha's sheep

$$2A/3 = A/60 + B/20 + G/5 + L$$

$$2A/3 = A/60 + A/36 + 11A/90 + L \text{ (as } B=5A/9 \text{ and } G=11A/18)$$

$$2A/3 = A/6 + L$$

$$A/2 = L$$

$$A = 2L$$

Also, it is given that Guran had ten more sheep than Lakha.

$$G = L + 10$$

$$11A/18 = A/2 + 10$$

$$A/9 = 10$$

$$A = 90 \text{ sheep}$$

Thus, Arjan had 90 sheep, Bhuvan had $5A/9$ i.e. 50 sheep, Guran had $11A/18$ i.e. 55 sheep and Lakha had $A/2$ i.e. 45 sheep.

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Brain Teaser No : 00590

You are locked inside a room with 6 doors - A, B, C, D, E, F. Out of which 3 are Entrances only and 3 are Exits only.

One person came in through door F and two minutes later second person came in through door A. He said, "You will be set free, if you pass through all 6 doors, each door once only and in correct order. Also, door A must be followed by door B or E, door B by C or E, door C by D or F, door D by A or F, door E by B or D and door F by C or D."

After saying that they both left through door B and unlocked all doors. In which order must you pass through the doors?

Answer

The correct order is CFDABE

It is given that one person came in through door F and second person came in through door A. It means that door A and door F are Entrances. Also, they both left through door B.

Hence, door B is Exit.

As Exit and Entrance should alter each other and we know two Entrances, let's assume that the third Entrance is W. Thus, there are 6 possibilities with "_" indicating Exit.

(1) _W_A_F (2) _W_F_A (3) _F_W_A (4) _F_A_W (5) _A_W_F (6) _A_F_W

As door A must be followed by door B or E and none of them lead to the door F, (1) and (6) are not possible.

Also, door D must be the Exit as only door D leads to the door A and door A is the Entrance.

(2) _W_FDA (3) _F_WDA (4) _FDA_W (5) DA_W_F

Only door D and door C lead to the door F. But door D is used. Hence, door C must be the Exit and precede door F. Also, the third Exit is B and the W must be door E.

(2) BECFDA (3) CFBEDA (4) CFDABE (5) DACEBF

But only door B leads to the door C and both are Exits. Hence, (2) and (5) are not possible. Also, door F does not lead to door B - discard (3). Hence, the possible order is (4) i.e. CFDABE.

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Brain Teaser No : 00187

There is a safe with a 5 digit number as the key. The 4th digit is 4 greater than the second digit, while the 3rd digit is 3 less than the 2nd digit. The 1st digit is thrice the last digit. There are 3 pairs whose sum is 11.

Find the number.

Answer

65292

As per given conditions, there are three possible combinations for 2nd, 3rd and 4th digits. They are (3, 0, 7) or (4, 1, 8) or (5, 2, 9)

It is given that there are 3 pairs whose sum is 11. All possible pairs are (2, 9), (3, 8), (4, 7), (5, 6). Now required number is 5 digit number and it contains 3 pairs of 11. So it must not be having 0 and 1 in it. Hence, the only possible combination for 2nd, 3rd and 4th digits is (5, 2, 9)

Also, 1st digit is thrice the last digit. The possible combinations are (3, 1), (6, 2) and (9, 3), out of which only (6, 2) with (5, 2, 9) gives 3 pairs of 11. Hence, the answer is 65292.

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Brain Teaser No : 00012

A person travels on a cycle from home to church on a straight road with wind against him. He took 4 hours to reach there.

On the way back to the home, he took 3 hours to reach as wind was in the same direction. If there is no wind, how much time does he take to travel from home to church?

Answer

Let distance between home and church is D.

A person took 4 hours to reach church. So speed while travelling towards church is $D/4$.

Similarly, he took 3 hours to reach home. So speed while coming back is $D/3$.

There is a speed difference of $7*D/12$, which is the wind helping person in 1 direction, & slowing him in the other direction. Average the 2 speeds, & you have the speed that person can travel in no wind, which is $7*D/24$.

Hence, person will take $D / (7*D/24)$ hours to travel distance D which is $24/7$ hours.

Answer is 3 hours 25 minutes 42 seconds

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Brain Teaser No : 00306

If a bear eats 65 pounds in fish every day EXCEPT every 6th day which it only eats 45 pounds of fish.

If the bear continues this, how many pounds of fish will it eat in 200 days?

Submitted by : David

Answer

The bear will eat 12,340 pounds of fish in 200 days.

It is given that on every 6th day beareats 45 pounds of fish i.e. on day number 6, 12, 18, 24, 192, 198 the bear eats 45 pounds of fish.

Total number of 6th days = $200/6 = 33$ (the bear eats 45 pounds)

Hence, the normal days are = $200 - 33 = 167$ (the bear eats 65 pounds)

Thus, in 200 days, the bear will eat

$$= (167) * (65) + (33) * (45)$$

$$= 10855 + 1485$$

$$= 12,340 \text{ pounds}$$

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Brain Teaser No : 00546

Ankit and Tejas divided a bag of Apples between them.

Tejas said, "It's not fair! You have 3 times as many Apples I have." Ankit said, "OK, I will give you one Apple for each year of your age." Tejas replied, "Still not fair. Now, you have twice as many Apples as I have." "Dear, that's fair enough as I am twice older than you.", said Ankit.

Ankit went to Kitchen to drink water. While Ankit was in Kitchen, Tejas took apples from Ankit's pile equal to Ankit's age.

Who have more apples now?

Answer

At the end, Ankit and Tejas, both have the same number of apples.

Let's assume that initially Tejas got N apples and his age is T years. Hence, initially Ankit got 3N apples and his age is 2T years.

Operation Ankit's Apples Tejas's Apples

Initially 3N N

Ankit gave T apples to Tejas

(equals age of Tejas) 3N - T N + T

Tejas took 2T apples from Ankit's pile

(equals age of Ankit) 3N - 3T N + 3T

It is given that after Ankit gave T apples to Tejas, Ankit had twice as many apples as Tejas had.

$$3N - T = 2*(N + T)$$

$$3N - T = 2N + 2T$$

$$N = 3T$$

From the table, at the end Ankit have (3N - 3T) apples and Tejas have (N + 3T) apples.

Substituting N = 3T, we get

$$\text{Ankit's apples} = 3N - 3T = 9T - 3T = 6T$$

$$\text{Tejas's apples} = N + 3T = 3T + 3T = 6T$$

Thus, at the end Ankit and Tejas, both have the same number of apples.

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Brain Teaser No : 00326

The sum of their (father, mother and son) ages is 70. The father is 6 times as old as the son.

When the sum of their ages is twice 70, the father will be twice as old as the son.

How old is the mother?

Submitted by : Tim Sanders

Answer

The mother is 29 years and 2 months old.

Let's assume that son is X years old. Hence, father is 6X years old and mother is (70-7X) years old.

It is given that the sum of their ages is 70, which will total 140 after 70/3 years.

After 70/3 years, son will be (X + 70/3) years old and father will be (6X + 70/3) years old. Also, it is given that after 70/3 years, the father will be twice as old as the son.

Thus,

$$(6X + 70/3) = 2 * (X + 70/3)$$

$$6X + 70/3 = 2X + 140/3$$

$$4X = 70/3$$

$$X = 35/6$$

Hence, their ages are

Son = X = 35/6 = 5 years and 10 months

Father = 6X = 6(35/6) = 35 years

Mother = (70 - 7X) = 70 - 7(35/6) = 29 years and 2 months

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Brain Teaser No : 00040

Assume for a moment that the earth is a perfectly uniform sphere of radius 6400 km. Suppose a thread equal to the length of the circumference of the earth was placed along the equator, and drawn to a tight fit.

Now suppose that the length of the thread is increased by 12 cm, and that it is pulled away uniformly in all directions.

By how many cm. will the thread be separated from the earth's surface?

Answer

The circumference of the earth is

$$= 2 * PI * r$$

$$= 2 * PI * 6400 \text{ km}$$

$$= 2 * PI * 6400 * 1000 \text{ m}$$

$$= 2 * PI * 6400 * 1000 * 100 \text{ cm}$$

$$= 1280000000 * PI \text{ cm}$$

where r = radius of the earth, PI = 3.141592654

Hence, the length of the thread is = 1280000000 * PI cm

Now length of the thread is increased by 12 cm. So the new length is = (1280000000 * PI) + 12 cm

This thread will make one concentric circle with the earth which is slightly away from the earth. The circumference of that circle is nothing but (1280000000 * PI) + 12 cm

Assume that radius of the outer circle is R cm

Therefore,

$$2 * PI * R = (1280000000 * PI) + 12 \text{ cm}$$

Solving above equation, R = 640000001.908 cm

Radius of the earth is r = 640000000 cm

Hence, the thread will be separated from the earth by

$$= R - r \text{ cm}$$

$$= 640000001.908 - 640000000$$

$$= 1.908 \text{ cm}$$

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Brain Teaser No : 00319

Substitute digits for the letters to make the following relation true.

$$\begin{array}{r} \text{S T I L L} \\ + \text{W I T H I N} \\ \hline \end{array}$$

L I M I T S

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter S, no other letter can be 3 and all other S in the puzzle must be 3.

Answer

The value of L must be one more than W i.e. $L=W+1$ and there must be one carry from $S+I=I$. Also, the value of S must be 9 as $S+I=I$ with one carry from $T+T=M$, which means that the value of T must be greater than 4.

From $I+H=I$, the value of H must be 0 as the value of S is 9.

Now, applying all those constraints and using trial-n-error, we get two possible answers.

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      9 7 1 6 6          9 8 5 3 3
+ 5 1 7 0 1 3      + 2 5 8 0 5 6
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    6 1 4 1 7 9      3 5 6 5 8 9
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Brain Teaser No : 00271

Substitute digits for the letters to make the following Division true

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          O U T
-----
S T E M | D E M I S E
        | D M O C
-----
          T U I S
          S T E M
-----
          Z Z Z E
          Z U M M
-----
          I S T

```

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter M, no other letter can be 3 and all other M in the puzzle must be 3.

Submitted by : Calon

Answer

$C=0, U=1, S=2, T=3, O=4, M=5, I=6, Z=7, E=8, D=9$

It is obvious that $U=1$ (as $U*STEM=STEM$) and $C=0$ (as $I-C=I$).

$S*O$ is a single digit and also $S*T$ is a single digit. Hence, their values (O, S, T) must be 2, 3 or 4 (as they can not be 0 or 1 or greater than 4).

Consider, $STEM*O=DMOC$, where $C=0$. It means that M must be 5. Now, its simple. $O=4, S=2, T=3, E=8, Z=7, I=6$ and $D=9$.

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          O U T          4 1 3
-----
S T E M | D E M I S E      2 3 8 5 | 9 8 5 6 2 8
        | D M O C          | 9 5 4 0
-----
          T U I S          3 1 6 2
          S T E M          2 3 8 5
-----
          Z Z Z E          7 7 7 8
          Z U M M          7 1 5 5
-----
          I S T          6 2 3

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Also, when arranged from 0 to 9, it spells CUSTOMIZED.

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Brain Teaser No : 00107

If you look at a clock and the time is 3:15.

What is the angle between the hour and the minute hands? (The answer to this is not zero!)

Answer

7.5 degrees

At 3:15 minute hand will be perfectly horizontal pointing towards 3. Whereas hour hand will be towards 4. Also, hour hand must have covered 1/4 of angle between 3 and 4.

The angle between two adjacent digits is $360/12 = 30$ degrees.

Hence 1/4 of it is 7.5 degrees.

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Brain Teaser No : 00170

A series comprising of alphabets contains 13 letters. The first seven letters in the given series are A, E, F, H, I, L, M

Can you find the next two letters?

Answer

The next letters in the series are N, O, R, S, U, X.

The pattern is - letters whose English names (Phonetic Pronunciations) start with vowels.

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Brain Teaser No : 00180

Which number in the series does not fit in the given series:

1 4 3 16 6 36 7 64 9 100

Answer

This is a series with odd positions containing position number whereas even positions containing square of the position. i.e. even position numbers are 4 16 36 64 100 and odd position numbers are 1 3 5 7 9

Hence, 6 does not fit in the series. It should be 5.

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Brain Teaser No : 00434

What are the next three numbers in the given series?

1 1 2 1 2 2 3 1 2 2 3 2 3 3 4 1 2 2 3 2 3 3 4 2 3 3 ?

Answer

The next three numbers in the series are 4, 3, 4.

The pattern is - the number of 1's in the binary expansion of the positive integers starting from 1.

Number Binary Equivalent # of 1's

1	1	1
2	10	1
3	11	2
4	100	1
5	101	2
6	110	2
7	111	3
8	1000	1

9 1001 2
10 1010 2
11 1011 3
12 1100 2
13 1101 3
14 1110 3
15 1111 4
16 10000 1
17 10001 2
18 10010 2
19 10011 3
20 10100 2
21 10101 3
22 10110 3
23 10111 4
24 11000 2
25 11001 3
26 11010 3
27 11011 4
28 11100 3
29 11101 4

The other way of looking at it is - break up the series into lines as follow:

1
1 2
1 2 2 3
1 2 2 3 2 3 3 4
1 2 2 3 2 3 3 4 2 3 3 4 3 4 4 5

A new line can be created by writing previous line followed by the previous line with 1 added to each number.

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Brain Teaser No : 00552

A cricket team of 11 players lined up in a straight line to have their photograph. The captain was asked to stand in the center of the line-up.

- 1) Bharat and Bhavin stood to the right of the captain
- 2) Two players stood between Bhagat and Bhairav
- 3) Seven players stood between Bhadrik and Bhanu
- 4) Bhavesh stood to the right of Bhuvan
- 5) Bhola and Bhumit stood either side of Bhagat
- 6) Bhavik and Bhumit stood to the left of the captain
- 7) Six players stood between Bhavin and Bhagat
- 8) Two players stood between Bhagat and Bhavik

Who is the captain? Can you tell the positions of all the palyers?

Answer

Players from left to right : Bhavik, (Bhadrik/Bhanu), (Bhola/Bhumit), Bhagat, (Bhola/Bhumit), BHUVAN, Bhairav, (Bharat/Bhavesh), (Bharat/Bhavesh), (Bhadrik/Bhanu), Bhavin

Let's number the positions 1 to 11 from left to right. Hence, the captain is at position 6. Now, looking at the clues 7, 5, 2 and 8 together:

- Poistion 1 - Bhavik or Bhairav
- Position 3 - Bhumit or Bhola
- Position 4 - Bhagat
- Position 5 - Bhumit or Bhola
- Poistion 7 - Bhavik or Bhairav
- Position 11 - Bhavin

From clue (3), the only possible positions for Bhadrik and Bhanu are Position 2 and Position 10.

Now there are 3 positions remaining - 6, 8 and 9 and remaining 3 players are Bhuvan, Bharat and Bhavesh. But from clue (1), Bharat stood to the right of the captain i.e. Bharat must be on position 8 or 9 as position 6 is for the captain. So either Bhuvan or Bhavesh is the captain.

From (4), Bhavesh stood to the right of Bhuvan. Hence, Bhuvan is the captain.

Players from left to right are : Bhavik, (Bhadrik/Bhanu), (Bhola/Bhumit), Bhagat, (Bhola/Bhumit), BHUVAN, Bhairav, (Bharat/Bhavesh), (Bharat/Bhavesh), (Bhadrik/Bhanu), Bhavin.

Thus,

* Bhavik(1), Bhagat(4), Bhuvan(6), Bhairav(7) and Bhavin(11) are the players whose positions are fixed.

* Bhadrik and Bhanu are at position 2 or 10.

* Bhola and Bhumit are at position 3 or 5.

* Bharat and Bhavesh are at position 8 or 9.

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Brain Teaser No : 00854

In the middle of the confounded desert, there is the lost city of "Ash". To reach it, I will have to travel overland by foot from the coast. On a trek like this, each person can only carry enough rations for five days and the farthest we can travel in one day is 30 miles. Also, the city is 120 miles from the starting point.

What I am trying to figure out is the fewest number of persons, including myself, that I will need in our Group so that I can reach the city, stay overnight, and then return to the coast without running out of supplies.

How many persons (including myself) will I need to accomplish this mission?

Answer

Total 4 persons (including you) required.

It is given that each person can only carry enough rations for five days. And there are 4 persons. Hence, total of 20 days rations is available.

1. First Day : 4 days of rations are used up. One person goes back using one day of rations for the return trip. The rations remaining for the further trek is for 15 days.

2. Second Day : The remaining three people use up 3 days of rations. One person goes back using 2 days of rations for the return trip. The rations remaining for the further trek is for 10 days.

3. Third Day : The remaining two people use up 2 days of rations. One person goes back using 3 days of rations for the return trip. The rations remaining for the further trek is for 5 days.

4. Fourth Day : The remaining person uses up one day of rations. He stays overnight. The next day he returns to the coast using 4 days of rations.

Thus, total 4 persons, including you are required.

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Brain Teaser No : 00348

There are 10 statements written on a piece of paper:

1. At least one of statements 9 and 10 is true.
2. This either is the first true or the first false statement.
3. There are three consecutive statements, which are false.
4. The difference between the numbers of the last true and the first true statement divides the number, that is to be found.
5. The sum of the numbers of the true statements is the number, that is to be found.
6. This is not the last true statement.
7. The number of each true statement divides the number, that is to be found.
8. The number that is to be found is the percentage of true statements.

9. The number of divisors of the number, that is to be found, (apart from 1 and itself) is greater than the sum of the numbers of the true statements.

10. There are no three consecutive true statements.

Find the minimal possible number?

Submitted by : Milind Gadagkar

Answer

The numebr is 420.

If statement 6 is false, it creates a paradox. Hence, Statement 6 must be true.

Consider Statement 2:

* If it is true, it must be the first true statement. Otherwise, it creates a paradox.

* If it is false, it must be the second false statement. Otherwise, it creates a paradox.

In both the cases, Statement 1 is false.

As Statement 1 is false, Statement 9 and Statement 10 both are false i.e. there are three consecutive true statements.

1 2 3 4 5 6 7 8 9 10

False - - - True - - False False

Let's assume that Statement 3 is false i.e. there are no three consecutive false statements. It means that Statement 2 and Statement 8 must be true, else there will be three consecutive false statements.

1 2 3 4 5 6 7 8 9 10

False True False - - True - True False False

Also, atleast two of Statements 4, 5 and 7 must be true as there are three consecutive true statements.

According to Statement 8, the number that is to be found is the percentage of true statements. Hence, number is either 50 or 60. Now if Statement 7 is true, then the number of each true statement divides the number, that is to be found. But 7 and 8 do not divide either 50 or 60. Hence, Statement 7 is false which means that Statement 4 and 5 are true. But Statement 5 contradicts the Statement 8. Hence, our assumption that Statement 3 is false is wrong and Statement 3 is true i.e. there are 3 consecutive false statements which means that Statement 8 is false as there is no other possibilities of 3 consecutive false statements.

Also, Statement 7 is true as Statement 6 is not the last true statement.

1 2 3 4 5 6 7 8 9 10

False - True - - True True False False False

According to Statement 7, the number of each true statement divides the number, that is to be found. And according to Statement 5, the sum of the numbers of the true statements is the number, that is to be found. For all possible combinations Statement 5 is false.

There 3 consecutive true statements. Hence, Statement 2 and Statement 4 are true.

1 2 3 4 5 6 7 8 9 10

False True True True False True True False False False

Now, the conditions for the number to be found are:

1. The numebr is divisible by 5 (Statement 4)

2. The numebr is divisible by 2, 3, 4, 6, 7 (Statement 7)

3. The number of divisors of the number, that is to be found, (apart from 1 and itself) is not greater than the sum of the numbers of the true statements. (Statement 9)

The minimum possible number is 420.

The divisors of 420, apart from 1 and itself are 2, 3, 4, 5, 6, 7, 10, 12, 14, 15, 20, 21, 28, 30, 35, 42, 60, 70, 84, 105, 140, 210. There are total of 22 divisors. Also, the sum of the numbers of the true statements is 22 ($2+3+4+6+7=22$), which satisfies the third condition.

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Brain Teaser No : 00186

500 men are arranged in an array of 10 rows and 50 columns according to their heights.

Tallest among each row of all are asked to come out. And the shortest among them is A.

Similarly after resuming them to their original positions, the shortest among each column are asked to come out. And the tallest among them is B.

Now who is taller A or B ?

Answer

No one is taller, both are same as A and B are the same person.

As it is mentioned that 500 men are arranged in an array of 10 rows and 50 columns according to their heights. Let's assume that position numbers represent their heights. Hence, the shortest among the 50, 100, 150, ... 450, 500 is person with height 50 i.e. A. Similarly the tallest among 1, 2, 3, 4, 5, 48, 48, 50 is person with height 50 i.e. B. Now, both A and B are the person with height 50. Hence both are same.

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Brain Teaser No : 00021

A rich man died. In his will, he has divided his gold coins among his 5 sons, 5 daughters and a manager.

According to his will: First give one coin to manager. 1/5th of the remaining to the elder son. Now give one coin to the manager and 1/5th of the remaining to second son and so on..... After giving coins to 5th son, divided the remaining coins among five daughters equally.

All should get full coins. Find the minimum number of coins he has?

Answer

We tried to find out some simple mathematical method and finally we wrote small C program to find out the answer. The answer is 3121 coins.

Here is the breakup:

First son = 624 coins
 Second son = 499 coins
 Third son = 399 coins
 Forth son = 319 coins
 Fifth son = 255 coins
 Daughters = 204 each
 Manager = 5 coins

=====

Brain Teaser No : 00302

There are 20 people in your applicant pool, including 5 pairs of identical twins.

If you hire 5 people randomly, what are the chances you will hire at least 1 pair of identical twins? (Needless to say, this could cause trouble ;))

Submitted by : Tim Sanders

Answer

The probability to hire 5 people with at least 1 pair of identical twins is 25.28%

5 people from the 20 people can be hired in $20C5 = 15504$ ways.

Now, divide 20 people into two groups of 10 people each :

G1 - with all twins

G2 - with all people other than twins

Let's find out all possible ways to hire 5 people without a single pair of indential twins.

People from G1 People from G2 No of ways to hire G1 without a single pair of indential twins No of ways to hire G2 Total ways

0 5 10C0 10C5 252

1 4 10C1 10C4 2100

2 3 10C2 * 8/9 10C3 4800

3 2 10C3 * 8/9 * 6/8 10C2 3600

4 1 10C4 * 8/9 * 6/8 * 4/7 10C1 800

5 0 10C5 * 8/9 * 6/8 * 4/7 * 2/6 10C0 32

Total 11584

Thus, total possible ways to hire 5 people without a single pair of indential twins = 11584 ways

So, total possible ways to hire 5 people with at least a single pair of indential twins = 15504 - 11584 = 3920 ways

Hence, the probability to hire 5 people with at least a single pair of indential twins = $3920/15504$

= $245/969$

= 0.2528

= 25.28%

=====
Brain Teaser No : 00408

A woman took a certain number of eggs to the market and sold some of them.

The next day, through the industry of her hens, the number left over had been doubled, and she sold the same number as the previous day.

On the third day the new remainder was tripled, and she sold the same number as before.

On the fourth day the remainder was quadrupled, and her sales the same as before.

On the fifth day what had been left over were quintupled, yet she sold exactly the same as on all the previous occasions and so disposed of her entire stock.

What is the smallest number of eggs she could have taken to market the first day, and how many did she sell daily? Note that the answer is not zero.

Submitted by : Dan Allen

Answer

She took 103 eggs to market on the first day and sold 60 eggs everyday.

Let's assume that she had N eggs on the first day and she sold X eggs everyday. Putting down the given information in the table as follow.

Days Eggs at the start of the day Eggs Sold Eggs Remaining

Day 1 N X N-X

Day 2 2N-2X X 2N-3X

Day 3 6N-9X X 6N-10X

Day 4 24N-40X X 24N-41X

Day 5 120N-205X X 120N-206X

It is given that she disposed of her entire stock on the fifth day. But from the table above, the number of eggs remaining are (120N-206X). Hence,

$120N - 206X = 0$

$120N = 206X$

$60N = 103X$

The smallest value of N and X must be 103 and 60 respectively. Hence, she took 103 eggs to market on the first day and sold 60 eggs everyday.

=====
Brain Teaser No : 00483

Four couples are going to the movie. Each row holds eight seats. Betty and Jim don't want to sit next to Alice and Tom. Alice and Tom don't want to sit next to Gertrude and Bill. On the otherhand, Sally and Bob don't want to sit next to Betty and Jim.

How can the couples arrange themselves in a row so that they all sit where they would like?
Submitted by : Tara Smith

Answer

From the given data, it can be inferred that:

(Sally & Bob) NOT (Betty & Jim) NOT (Alice & Tom) NOT (Gertrude & Bill)

(A) NOT (B) means A and B can not seat next to each other.

Now, it is obvious that (Betty & Jim) and (Alice & Tom) will occupy the corner seats as both of them can have only one neighbour. Therefore,

(Gertrude & Bill) will seat next to (Betty & Jim)

(Sally & Bob) will seat next to (Gertrude & Bill)

(Alice & Tom) will seat next to (Sally & Bob)

Thus, there are two possible arrangements - a mirror images of each other.

1. (Betty & Jim) - (Gertrude & Bill) - (Sally & Bob) - (Alice & Tom)
2. (Alice & Tom) - (Sally & Bob) - (Gertrude & Bill) - (Betty & Jim)

=====

Brain Teaser No : 00528

Substitute digits for the letters to make the following relation true.

$$\begin{array}{r}
 \text{N E V E R} \\
 \text{L E A V E} \\
 + \qquad \qquad \text{M E} \\
 \hline
 \text{A L O N E}
 \end{array}$$

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter M, no other letter can be 3 and all other M in the puzzle must be 3.

Answer

A tough one!!!

Since $R + E + E = 10 + E$, it is clear that $R + E = 10$ and neither R nor E is equal to 0 or 5. This is the only entry point to solve it. Now use trial-n-error method.

$$\begin{array}{r}
 \text{N E V E R} \qquad \qquad \qquad 2 \ 1 \ 4 \ 1 \ 9 \\
 \text{L E A V E} \qquad \qquad \qquad 3 \ 1 \ 5 \ 4 \ 1 \\
 + \qquad \qquad \qquad \text{M E} \qquad \qquad \qquad + \qquad \qquad \qquad 6 \ 1 \\
 \hline
 \text{A L O N E} \qquad \qquad \qquad 5 \ 3 \ 0 \ 2 \ 1
 \end{array}$$

=====

Brain Teaser No : 00118

Shahrukh speaks truth only in the morning and lies in the afternoon, whereas Salman speaks truth only in the afternoon and lies in the morning.

A says that B is Shahrukh.

Is it morning or afternoon and who is A - Shahrukh or Salman?

Answer

It is Afternoon and A can be Salman or Shahrukh. If A is Salman, he is speaking truth. If A is Shahrukh, he is lying.

Want to confirm it? Consider following 4 possible answers and check for its truthness individually.

1. It is Morning and A is Shahrukh
2. It is Morning and A is Salman
3. It is Afternoon and A is Shahrukh
4. It is Afternoon and A is Salman

=====

Brain Teaser No : 00161

Mr. D'souza has bought four cars - Merc, Honda, Ford, Zen - as presents for his sons' birthdays, all of which are next week. Given the following information, what will each son get?

Alan will not get the Honda unless Barry gets the Merc and Denzil gets the Ford. Barry will not get the Ford unless Carl gets the Zen and Alan gets the Merc. Denzil will not get the Zen unless Alan gets the Honda and Barry gets the Merc. Alan will not get the Merc unless Carl gets the Zen and Denzil gets the Ford. Barry will not get the Merc unless Alan gets the Zen and Denzil gets the Ford. Alan will not get the Zen unless Barry gets the Honda and Carl gets the Merc. Carl will not get the Zen unless Barry gets the Honda and Alan gets the Ford. Alan will not get the Ford unless Barry gets the Zen and Denzil gets the Honda. Carl will not get the Merc unless Denzil gets the Honda.

Answer

Let's put given 9 information in a table. The person in Bold Font will not get the corresponding car unless the persons in Normal Font get the corresponding cars. Also, the person will Italics will get the remaining car.

	Merc	Honda	Ford	Zen
1	Barry	Alan	Denzil	Carl
2	Alan	Denzil	Barry	Carl
3	Barry	Alan	Carl	Denzil
4	Alan	Barry	Denzil	Carl
5	Barry	Carl	Denzil	Alan
6	Carl	Barry	Denzil	Alan
7	Denzil	Barry	Alan	Carl
8	Carl	Denzil	Alan	Barry
9	Carl	Denzil	? ?	

Now, let's assume that Alan gets the Merc. Then from (4), Barry gets the Honda, Denzil gets the Ford and Carl gets the Zen. But from (7), Carl will not get the Zen unless Barry gets the Honda and Alan gets the Ford. Thus, it contradicts the original assumption. Hence, Alan will not get the Merc.

Let's assume that Alan gets the Honda. Then from (1), Barry gets the Merc, Denzil gets the Ford and Carl gets the Zen. But from (5) or from (7), it contradicts the original assumption. Hence, Alan will not get the Honda.

Let's assume that Alan gets the Ford. Then from (8), Carl gets the Merc, Denzil gets the Ford and Barry gets the Zen - which does not contradict any of the statement.

Similarly, you can assume that Alan gets the Zen. (which is contradictory to (9))

Hence, Alan gets the Ford, Barry gets the Zen, Carl gets the Merc and Denzil gets the Honda.

=====

Brain Teaser No : 00110

In a certain game, if 2 wixsomes are worth 3 changs, and 4 changs are worth 1 plut, then 6 plutes are worth how many wixsomes?

Answer

It is given that

2 wixsomes = 3 changs

8 wixsomes = 12 changs ----- (I)

Also, given that

4 changs = 1 plut

12 changs = 3 plutes

8 wixsomes = 3 plutes ----- From (I)

Therefore,

6 plutes = 16 wixsomes

=====

Brain Teaser No : 00267

A stick of length 1 is divided randomly into 3 parts.

What is the probability that a triangle can be made with those three parts?

Answer

The probability, that a triangle can be made by randomly dividing a stick of length 1 into 3 parts, is 25%

A triangle can be made, if and only if, sum of two sides is greater than the third side.

Thus,

$$X_1 < X_2 + X_3$$

$$X_2 < X_3 + X_1$$

$$X_3 < X_1 + X_2$$

Also, it is given that $X_1 + X_2 + X_3 = 1$

From above equations: $X_1 < 1/2$, $X_2 < 1/2$, $X_3 < 1/2$

Thus, a triangle can be formed, if all three sides are less than 1/2 and sum is 1.

Now, let's find the probability that one of X_1 , X_2 , X_3 is greater than or equal to 1/2.

Note that to divide stick randomly into 3 parts, we need to choose two numbers P and Q, both are between 0 & 1 and P

Now, X_1 will be greater than or equal to 1/2, if and only if both the numbers, P & Q, are greater than or equal to 1/2. Thus, probability of X_1 being greater than or equal to 1/2 is $= (1/2) * (1/2) = 1/4$

Similarly, X_3 will be greater than or equal to 1/2, if and only if both the numbers, P & Q, are less than or equal to 1/2. Thus, probability of X_3 being greater than or equal to 1/2 is $= (1/2) * (1/2) = 1/4$

Also, probability of X_2 being greater than or equal to 1/2 is $= (1/2) * (1/2) = 1/4$

The probability that a triangle can not be made

$$= (1/4) + (1/4) + (1/4)$$

$$= (3/4)$$

Thus, the probability that a triangle can be made

$$= 1 - (3/4)$$

$$= (1/4)$$

$$= 25 \%$$

Thus, the probability that a triangle can be made by randomly dividing a stick of length 1 into 3 parts is 25%

Let's generalise the problem. What is the probability that a polygon with (N+1) sides can be made from (N+1) segments obtained by randomly dividing a stick of length 1 into (N+1) parts?

The probability is $= 1 - (N+1)*(1/2)^N$

The probability tends to 1 as N grows. Thus, it is easier to make a N-sided polygon than it is to make a triangle!!!

=====

Brain Teaser No : 00800

There are 4 mathematicians - Brahma, Sachin, Prashant and Nakul - having lunch in a hotel. Suddenly, Brahma thinks of 2 integer numbers greater than 1 and says, "The sum of the numbers is..." and he whispers the sum to Sachin. Then he says, "The product of the numbers is..." and he whispers the product to Prashant. After that following conversation takes place :

Sachin : Prashant, I don't think that we know the numbers.

Prashant : Aha!, now I know the numbers.

Sachin : Oh, now I also know the numbers.

Nakul : Now, I also know the numbers.

What are the numbers? Explain your answer.

Submitted by : Sachin Kanekar

Answer

The numbers are 4 and 13.

As Sachin is initially confident that they (i.e. he and Prashant) don't know the numbers, we can conclude that -

- 1) The sum must not be expressible as sum of two primes, otherwise Sachin could not have been sure in advance that Prashant did not know the numbers.
- 2) The product cannot be less than 12, otherwise there would only be one choice and Prashant would have figured that out also.

Such possible sum are - 11, 17, 23, 27, 29, 35, 37, 41, 47, 51, 53, 57, 59, 65, 67, 71, 77, 79, 83, 87, 89, 93, 95, 97, 101, 107, 113, 117, 119, 121, 123, 125, 127, 131, 135, 137, 143, 145, 147, 149, 155, 157, 161, 163, 167, 171, 173, 177, 179, 185, 187, 189, 191, 197,

Let's examine them one by one.

If the sum of two numbers is 11, Sachin will think that the numbers would be (2,9), (3,8), (4,7) or (5,6).

Sachin : "As 11 is not expressible as sum of two primes, Prashant can't know the numbers." Here, the product would be 18(2*9), 24(3*8), 28(4*7) or 30(5*6). In all the cases except for product 30, Prashant would know the numbers.

- if product of two numbers is 18:

Prashant : "Since the product is 18, the sum could be either 11(2,9) or 9(3,6). But if the sum was 9, Sachin would have deduced that I might know the numbers as (2,7) is the possible prime numbers pair. Hence, the numbers must be 2 and 9." (OR in otherwords, 9 is not in the Possible Sum List)

- if product of two numbers is 24:

Prashant : "Since the product is 24, the sum could be either 14(2,12), 11(3,8) or 10(4,6). But 14 and 10 are not in the Possible Sum List. Hence, the numbers must be 3 and 8."

- if product of two numbers is 28:

Prashant : "Since the product is 28, the sum could be either 16(2,14) or 11(4,7). But 16 is not in the Possible Sum List. Hence, the numbers must be 4 and 7."

- if product of two numbers is 30:

Prashant : "Since the product is 30, the sum could be either 17(2,15), 13(3,10) or 11(5,6). But 13 is not in the Possible Sum List. Hence, the numbers must be either (2,15) or (5,6)." Here, Prashant won't be sure of the numbers.

Hence, Prashant will be sure of the numbers if product is either 18, 24 or 28.

Sachin : "Since Prashant knows the numbers, they must be either (3,8), (4,7) or (5,6)." But he won't be sure. Hence, the sum is not 11.

Summerising data for sum 11:

Possible Sum PRODUCT Possible Sum

2+9 18 2+9=11 (possible)

3+6=9

3+8 24 2+12=14

3+8=11 (possible)

4+6=10

4+7 28 2+12=14

3+8=11 (possible)

4+6=10

5+6 30 2+15=17 (possible)

3+10=13

5+6=11 (possible)

Following the same procedure for 17:

Possible Sum PRODUCT Possible Sum

2+15 30 2+15=17 (possible)

3+10= 13

5+6=11 (possible)

3+14 42 2+21=23 (possible)

3+14=17 (possible)

6+7=13

4+13 52 2+26=28

4+13=17 (possible)

5+12 60 2+30=32

3+20=23 (possible)

4+15=19
 5+12=17 (possible)
 6+10=16
 6+11 66 2+33=35 (possible)
 3+22=25
 6+11=17 (possible)
 7+10 70 2+35=37 (possible)
 5+14=19
 7+10=17 (possible)
 8+9 72 2+36=38
 3+24=27 (possible)
 4+18=22
 6+12=18
 8+9=17 (possible)

Here, Prashant will be sure of the numbers if the product is 52.

Sachin : "Since Prashant knows the numbers, they must be (4,13)."

For all other numbers in the Possible Sum List, Prashant might be sure of the numbers but Sachin won't.

Here is the step by step explanation:

Sachin : "As the sum is 17, two numbers can be either (2,15), (3,14), (4,13), (5,12), (6,11), (7,10) or (8,9). Also, as none of them is a prime numbers pair, Prashant won't be knowing numbers either."

Prashant : "Since Sachin is sure that both of us don't know the numbers, the sum must be one of the Possible Sum List. Further, as the product is 52, two numbers can be either (2,26) or (4,13). But if they were (2,26), Sachin would not have been sure in advance that I don't know the numbers as 28 (2+26) is not in the Possible Sum List. Hence, two numbers are 4 and 13."

Sachin : "As Prashant now knows both the numbers, out of all possible products - 30(2,15), 42(3,14), 52(4,13), 60(5,12), 66(6,11), 70(7,10), 72(8,9) - there is one product for which list of all possible sum contains ONLY ONE sum from the Possible Sum List. And also, no such two lists exist. [see table above for 17] Hence, two numbers are 4 and 13."

Nakul figured out both the numbers just as we did by observing the conversation between Sachin and Prashant.

It is interesting to note that there are no other such two numbers. We checked all the possible sums till 500 !!!

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Brain Teaser No : 00002

Ali Baba had four sons, to whom he bequeathed his 39 camels, with the proviso that the legacy be divided in the following way :

The oldest son was to receive one half the property, the next a quarter, the third an eighth and the youngest one tenth. The four brothers were at a loss as how to divide the inheritance among themselves without cutting up a camel, until a stranger appeared upon the scene.

Dismounting from his camel, he asked if he might help, for he knew just what to do. The brothers gratefully accepted his offer.

Adding his own camel to Ali Baba's 39, he divided the 40 as per the will. The oldest son received 20, the next 10, the third 5 and the youngest 4. One camel remained : this was his, which he mounted and rode away.

Scratching their heads in amazement, they started calculating. The oldest thought : is not 20 greater than the half of 39? Someone must have received less than his proper share ! But each brother discovered that he had received more than his due. How is it possible?

Answer

They took their percentages from 40 and not from 39, so they got more than their share.

The oldest son got $1/2$ of 40 = 20 which is 0.5 more

The second son got $1/4$ of 40 = 10 which is 0.25 more

The third son got $1/8$ of 40 = 5 which is 0.125 more

The youngest son got $\frac{1}{10}$ of 40 = 4 which is 0.1 more
And the stranger got $\frac{1}{40}$ of 40 = 1 which is 0.025 more (As he is not supposed to get anything)
All these fractions add to = $0.5 + 0.25 + 0.125 + 0.1 + 0.025 = 1$ which stranger took away.

=====

Brain Teaser No : 00113

The Bulls, Pacers, Lakers and Jazz ran for a contest.
Anup, Sujit, John made the following statements regarding results.

- * Anup said either Bulls or Jazz will definitely win
- * Sujit said he is confident that Bulls will not win
- * John said he is confident that neither Jazz nor Lakers will win

When the result came, it was found that only one of the above three had made a correct statement. Who has made the correct statement and who has won the contest?

Answer

Sujith has made the correct statement and Lakers has won the contest.

Let's solve it. Create the table with the statements made.

Bulls Pacers Lakers Jazz

Anup YES YES

Sujit NO

John NO NO

Now let's analyse the situation by assuming that Anup has made the correct statement. It means that either Bulls or Jazz has won the contest.

- * If bulls has won, then John is also correct
- * If Jazz has won, then Sujit is also correct.

In either case Anup has made the wrong statement.

Now assume that Sujit has made the correct statement. It means that either or Pacers or Lakers or Jazz won the contest.

- * If Pacers has won, then John is also correct.
- * If Jazz has won, then Anup is also correct.
- * If Lakers has won, then Anup and John both are wrong.

So is the answer - Sujit has made the correct statement and Lakers won the contest. Similarly, analyse for john which means either Bulls or Pacers has won the contest.

=====

Brain Teaser No : 00345

What are the next three numbers in the given series?

1 2 3 2 1 2 3 4 2 1 2 3 4 3 2 ? ? ?

Answer

The next three numbers are 3, 4 and 5.

The pattern is - the number of letters in the Roman numeral representation of the numbers i.e. number of letters in I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV,

Hence, the next numbers in the given series are 3(XVI), 4(XVII), 5(XVIII), 3(XIX), 2(XX), 3(XXI), 4(XXII), 5(XXIII), 4(XXIV), 3(XXV), etc...

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Brain Teaser No : 00383

Consider a state lottery where you get to choose 8 numbers from 1 to 80, no repetition allowed. The Lottery Commission chooses 11 from those 80 numbers, again no repetition. You win the lottery if at least 7 of your numbers are there in the 11 chosen by the Lottery Commission.

What is the probability of winning the lottery?

Answer

The probability of winning the lottery is two in one billion i.e. only two person can win from one billion !!!

Let's find out sample space first. The Lottery Commission chooses 11 numbers from the 80. Hence, the 11 numbers from the 80 can be selected in ${}^{80}C_{11}$ ways which is very very high and is equal to 1.04776×10^{13}

Now, you have to select 8 numbers from 80 which can be selected in ${}^{80}C_8$ ways. But we are interested in only those numbers which are in 11 numbers selected by the Lottery Commission. There are 2 cases.

* You might select 8 numbers which all are there in 11 numbers chosen by the Lottery Commission. So there are ${}^{11}C_8$ ways.

* Another case is you might select 7 lucky numbers and 1 non-lucky number from the remaining 69 numbers. There are $({}^{11}C_7) \times ({}^{69}C_1)$ ways to do that.

So total lucky ways are
 $= ({}^{11}C_8) + ({}^{11}C_7) \times ({}^{69}C_1)$
 $= (165) + (330) \times (69)$
 $= 165 + 22770$
 $= 22935$

Hence, the probability of the winning lottery is
 $= (\text{Total lucky ways}) / (\text{Total Sample space})$
 $= (22935) / (1.04776 \times 10^{13})$
 $= 2.1889 \times 10^{-9}$
 i.e. 2 in a billion.

=====

Brain Teaser No : 00518

Write 1111.....(243 times) i.e. a 243 digit number with all 1s.
 Prove that it is divisible by 243.
 Submitted by : Simat Goyal

Answer

Prove it using the mathematical induction.
 First here are a couple of things to note:

[1] A number whose digits add up to a multiple of three is divisible by 3.
 e.g. 369: $3+6+9=18$; $1+8=9$ which is a multiple of 3 hence 369 is divisible by 3.

[2] Whenever a number (X) is multiplied with another number (Y) then the product (X*Y) will have all the factors of X as well as all the factors of Y in its set of factors.
 e.g. if X has factors of (1,P,Q,X) and Y has factors of (1,Q,R,Y) then X*Y has factors of (1,P,Q,Q,R,X,Y).

Let

N = any series of digits (e.g. N=369)

D = the number of digits in N (e.g. if N=369 then D=3)

P = is a number constructed in the following way : a 1, followed by (D-1) 0s, followed by another 1, followed by (D-1) 0s, followed by another 1. (e.g. if N=369 then D=3 and P would be 1001001) Note that P will always be divisible by 3.

Also, if we multiply N with P we are essentially repeating N for (D-1) times.
e.g. if N=369 then D=3, P=1001001 and $N \cdot P = 369369369$

Let's start with N=111. It is clear that N is divisible by 3. (From [1])

Also, D=3 and P=1001001

$N \cdot P = 111111111$ (9 times)

The resulting number 111111111 must be divisible by 9 as N and P both are divisible by 3.

Now, let's start with N=111111111. It is clear that N is divisible by 9.

Also, D=9 and P=1000000001000000001

$N \cdot P = 111111111\dots$ (27 times)

The resulting number 111111111... (27 times) must be divisible by 27 as N is divisible by 9 and P is divisible by 3.

Repeat the same procedure for N=111111111... (27 times) The resulting number 111111111... (81 times) must be divisible by 81 as N is divisible by 27 and P is divisible by 3.

Similarly, for N=111111111... (81 times) The resulting number 111111111... (243 times) must be divisible by 243 as N is divisible by 81 and P is divisible by 3.

Thus, 111111111... (243 times) is divisible by 243.

Thanks to Ryan Hutcherson for solution !!!

=====

Brain Teaser No : 00533

What are the next two numbers in the series?

29, 11, 13, 17, 25, 32, 37, ?, ?

Answer

The next two numbers are 47 and 58.

The pattern is : Sum of the digits in all previous numbers in the sequence.

First Number = 29

Second Number = 2 + 9 = 11

Third Number = (11) + 1 + 1 = 13

Forth Number = (13) + 1 + 3 = 17

Fifth Number = (17) + 1 + 7 = 25

Sixth Number = (25) + 2 + 5 = 32

Seventh Number = (32) + 3 + 2 = 37

Eight Number = (37) + 3 + 7 = 47

Ninth Number = (47) + 4 + 7 = 58

=====

Brain Teaser No : 00571

Substitute digits for the letters to make the following relation true.

$$\begin{array}{r} \text{S E N D} \\ + \text{M O R E} \\ \hline \text{M O N E Y} \end{array}$$

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter S, no other letter can be 3 and all other S in the puzzle must be 3.

Submitted by : Omesh Garg

Answer

It is obvious that M=1.

If S=9 and if there is a carry, the maximum value of O will be 1. But M=1. Hence, O has to be 0.

Also, S has to be 9 as there is no other way of getting total 10 for S+M.

Now, N is (E+1) i.e. there must be a carry from (N+R). It means that R must be 9 which is already assigned to S. Hence, R has to be 8 and a carry from (D+E) will make R's value 9.

Now, using trial-n-error:

$$\begin{array}{r}
 9\ 5\ 6\ 7 \\
 +\ 1\ 0\ 8\ 5 \\
 \hline
 1\ 0\ 6\ 5\ 2
 \end{array}$$

O=0, M=1, Y=2, E=5,
N=6, D=7, R=8, S=9

=====

Brain Teaser No : 00026

Find the last digit of summation of the series:

$$199 + 299 + 399 + 499 + \dots + 9899 + 9999$$

Answer

The last digit of the series is 0.

We group the sum as follow:

$$(199 + 1199 + \dots + 9199) + (299 + 2299 + \dots + 9299) + \dots + (999 + 1999 + \dots + 9999) + (1099 + 2099 + 3099 + \dots + 9099)$$

All the terms in a single group have the same last digit (i.e. last digits of $199 + 1199 + \dots + 9199$ are same, is 1, & similarly for the other groups).

Also, there are 10 terms in each group except for the last one. Therefore the last digit of the sum of terms in first 9 groups is 0. (as whatever be the last digit, we have to multiply it by 10) And the last digit of the sum of the terms in the group 10 is obviously 0.

Hence, the last digit of the series is 0.

=====

Brain Teaser No : 00030

A certain street has 1000 buildings. A sign-maker is contracted to number the houses from 1 to 1000. How many zeroes will he need?

Answer

The sign-maker will need 192 zeroes.

Divide 1000 building numbers into groups of 100 each as follow:

$$(1..100), (101..200), (201..300), \dots, (901..1000)$$

For the first group, sign-maker will need 11 zeroes.

For group numbers 2 to 9, he will require 20 zeroes each.

And for group number 10, he will require 21 zeroes.

The total numbers of zeroes required are

$$= 11 + 8 \times 20 + 21$$

$$= 11 + 160 + 21$$

$$= 192$$

=====

Brain Teaser No : 00123

A soldier loses his way in a thick jungle. At random he walks from his camp but mathematically in an interesting fashion.

First he walks one mile East then half mile to North. Then $\frac{1}{4}$ mile to West, then $\frac{1}{8}$ mile to South and so on making a loop.

Finally how far he is from his camp and in which direction?

Answer

The soldier is 0.8944 miles away from his camp towards East-North.

It is obvious that he is in East-North direction.

Distance travelled in North and South directions

= $1/2 - 1/8 + 1/32 - 1/128 + 1/512 - 1/2048 +$ and so on... (a geometric series with $r = (-1/4)$)

$$= \frac{(1/2) * (1 - (-1/4)^n)}{(1 - (-1/4))}$$

$$= 1 / (2 * (1 - (-1/4)))$$

$$= 2/5$$

Similarly in East and West directions

= $1 - 1/4 + 1/16 - 1/64 + 1/256 -$ and so on... (a geometric series with $r = (-1/4)$)

$$= \frac{(1) * (1 - (-1/4)^n)}{(1 - (-1/4))}$$

$$= 1 / (1 - (-1/4))$$

$$= 4/5$$

So the soldier is 4/5 miles away towards East and 2/5 miles away towards North. So using right angled triangle, soldier is 0.8944 miles away from his camp.

=====

Brain Teaser No : 00174

Arrange five planets such that 4 of them add up to 5th planet numerically. Each of the letters of the planet should represent a unique number from the range 0 - 9. You have to use all ten digits.

There is an amazing mathematical relationship exists among the names of the planet.

Answer

The thought process is initially to find planets such that the total number of alphabets in them is 10.

The only possible combination of planets is Saturn, Uranus, Venus, Mars and Neptune because for other combinations there will be more than 10 alphabets. Among these five, Neptune is the lengthiest, so it must be the sum of the other four.

```

S A T U R N
U R A N U S
  V E N U S
+   M A R S
-----
N E P T U N E

```

Now the only possible value for N is 1. By finding the value for S, we can reach the result:

```

  3 5 8 6 9 1
  6 9 5 1 6 3
    2 0 1 6 3
+   4 5 9 3
-----
1 0 7 8 6 1 0

```

=====

Brain Teaser No : 00218

Ekta got chocolates to give her friends on her Birthday. If she gives 3 chocolates to each friend, one friend will get only 2 chocolates. Also, if she gives 2 chocolates to each friends, she will left with 15 chocolates.

How many chocolates Ekta got on her Birthday? and how many friends are there?

Answer

47 Chocolates and 16 Friends

Let's assume that there are total C chocolates and F friends.

According to first case, if she gives 3 chocolates to each friend, one friend will get only 2 chocolates.

$$3*(F - 1) + 2 = C$$

Similarly, if she gives 2 chocolates to each friends, she will left with 15 chocolates.

$$2*F + 15 = C$$

Solving above 2 equations, F = 16 and C = 47. Hence, Ekta got 47 chocolates and 16 friends.

=====

Brain Teaser No : 00285

Five executives of a Cultural Committee hold a conference in Mumbai.

Mr. A converses in English and Marathi.

Mr. B converses in Hindi and English.

Mr. C converses in Marathi and Hindi.

Mr. D converses in Hindi and Gujarati.

Mr. E, a native Marathi, can also converse in Gujarati.

If a sixth executive is brought in, to be understood by the maximum number of the original five, he should be fluent in which 2 languages?

Answer

The sixth person should be fluent in Hindi & Marathi.

Find out how many executives can understand each of the language.

Three executives speak Hindi - Mr. B, Mr. C and Mr. D. The other two executives - Mr. A and Mr. E, speak Marathi. Thus, the sixth executive should be fluent in Hindi and Marathi so that original five executives can converse with him.

=====

Brain Teaser No : 00209

If today is Wednesday, what is one day before the day, after the day, three days after the day before yesterday?

Submitted by : Jennifer Renick

Answer

Thursday

Start backwards.

Today is Wednesday.

The day before yesterday is Monday.

Three days after Monday is Thursday.

The day after Thursday is Friday

The day before Friday is Thursday.

Also, note that the first two conditions cancel each other out as one day before the day, one day after the day is the same day. Hence, it can be reduced to "three days after the day before yesterday".

=====

Brain Teaser No : 00240

Ben can never tell a lie, George can never tell the truth.

One of them said, "The other one said he was George".

Who said that?

Submitted by : Zachary Morrison

Answer

The speaker is George.

Since Ben cann't lie, he cann't say that he is George. Similarly, since George cann't tell the truth, he too cann't say that he is George. Thus, none of them can say that he is George. It means that the speaker is lying. Hence, the speaker must be George.

=====

Brain Teaser No : 00237

A girl has a certain number of pets. All but two are dogs, all but two are cats and all but two are goats.

How many pets does this girl have?

Submitted by : Kimi

Answer

The answer is 3 i.e. 1 dog, 1 cat and 1 goat

It says "all but two are dogs", which means that 2 are not dog. Similarly, 2 are not cat and 2 are not goat. Thus solution is there are 3 pets out of which one is dog, one is cat and one is goat.

Also, there is one more aspect to it. The girl might have only 2 pets and none of them is dog or cat or goat.

=====

Brain Teaser No : 00004

There is a family party consisting of two fathers, two mothers, two sons, one father-in-law, one mother-in-law, one daughter-in-law, one grandfather, one grandmother and one grandson.

What is the minimum number of persons required so that this is possible?

Answer

There are total 2 couples and a son. Grandfather and Grand mother, their son and his wife and again their son. So total 5 people.

Grandfather, Grandmother

|

|

Son, wife

|

|

Son

=====

Brain Teaser No : 00683

If a rook and a bishop of a standard chess set are randomly placed on a chessboard, what is the probability that one is attacking the other?

Note that both are different colored pieces.

Submitted by : Eamon

Answer

The probability of either the Rook or the Bishop attacking the other is 0.3611

A Rook and a Bishop on a standard chess-board can be arranged in $64P2 = 64*63 = 4032$ ways

Now, there are 2 cases - Rook attacking Bishop and Bishop attacking Rook. Note that the Rook and the Bishop never attack each other simultaneously. Let's consider both the cases one by one.

Case I - Rook attacking Bishop

The Rook can be placed in any of the given 64 positions and it always attacks 14 positions. Hence, total possible ways of the Rook attacking the Bishop = $64 \times 14 = 896$ ways

Case II - Bishop attacking Rook

View the chess-board as a 4 co-centric hollow squares with the outermost square with side 8 units and the innermost square with side 2 units.

If the bishop is in one of the outer 28 squares, then it can attack 7 positions. If the bishop is in one of the 20 squares at next inner-level, then it can attack 9 positions. Similarly if the bishop is in one of the 12 squares at next inner-level, then it can attack 11 positions. And if the bishop is in one of the 4 squares at next inner-level (the innermost level), then it can attack 13 positions.

Hence, total possible ways of the Bishop attacking the Rook
 $= 28 \times 7 + 20 \times 9 + 12 \times 11 + 4 \times 13$
 $= 560$ ways

Thus, the required probability is
 $= (896 + 560) / 4032$
 $= 13/36$
 $= 0.3611$

=====

Brain Teaser No : 00234

Substitute digits for the letters to make the following Division true.

```

          A L E
    -----
C A R | E A R L Y
      | C A R
    -----
      R F F L
      I L Y I
    -----
      Y Y I Y
      Y Y A U
    -----
          T

```

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter Y, no other letter can be 3 and all other Y in the puzzle must be 3.

Submitted by : Calon

Answer

A simple one !!!

- * A=1, as $A \times \text{CAR} = \text{CAR}$
- * F=0, as $A - A = F$ and $R - R = F$
- * I=2, as $\text{YYIY} - \text{YYAU} = \text{T}$, hence I must be A+1
- * R=3, as $\text{RFFL} - \text{ILYI} = \text{YYI}$, hence R must be I+1
- * L=4, as $\text{RFFL} - \text{ILYI} = \text{YYI}$ and $I=2$
- * Y=5, as $\text{C13} \times 4 = 24\text{Y2}$
- * C=6, as $\text{C13} \times 4 = 2452$
- * E=9, as $E - C = R$
- * U=7 and T=8

```

          1 4 9
-----
6 1 3 | 9 1 3 4 5
      | 6 1 3
-----
          3 0 0 4
          2 4 5 2
-----
          5 5 2 5
          5 5 1 7
-----
                   8

```

=====

Brain Teaser No : 00257

If $A+B=C$, $D-C=A$ and $E-B=C$, then what does $D+F$ stands for? Provide your answer in letter terms as well as in number terms.

Submitted by : David

Answer

J or 10

A simple one.

Assume that each character represents the number equivalent to the position in the alphabet i.e. $A = 1$, $B = 2$, $C = 3$, $D = 4$ and so on. Now let's check our assumption.

$A + B = C$ i.e. $1 + 2 = 3$

$D - C = A$ i.e. $4 - 3 = 1$

$E - B = C$ i.e. $5 - 2 = 3$

Thus, our assumption was Correct. Hence, $D + F = J$ i.e. $4 + 6 = 10$

=====

Brain Teaser No : 00256

Find the next two numbers in the given series.

0 2 3 4 5 5 7 6 6 7 11 7 13 9 8 8 17 8 19 9 10 13 23 ? ?

Answer

The next two numbers are 9 and 10.

The pattern is - sum of factors in prime factorization of positive integers starting with 1. Note that 1 is not a Prime number.

Integer Prime Factorization Sum

1 - 0

2 2 2

3 3 3

4 2*2 4

5 5 5

6 2*3 5

7 7 7

8 2*2*2 6

9 3*3 6

10 2*5 7

11 11 11

12 2*2*3 7

13 13 13

14 2*7 9

15 3*5 8

16 2*2*2*2 8

17 17 17

18 2*3*3 8

19 19 19
 20 2*2*5 9
 21 3*7 10
 22 2*11 13
 23 23 23
 24 2*2*2*3 9
 25 5*5 10

Hence, the next numbers in the series are 9 10 15 9 11 29 10 31 10 14 19 12 10 37 21 16 11 41 12 43 15 11 25 47 11 14 12

=====

Brain Teaser No : 00349

In order to conduct the work at store it is necessary to have a minimum of three workers each day. The staff consists of five persons who work on part time basis. Alice can work on Mondays, Wednesdays and Fridays. Betty cannot report for work on Wednesdays. Carol can report for work on Tuesdays and Wednesdays only. Dorothy cannot work on Fridays. Emmy is available anytime except on the first Monday and Thursday of the month. During which day of the week, might it be impossible to conduct the work at store? Note that the store remains close on Sundays.

Answer

It will be impossible to conduct the work on first thursday.

Summarizing the availability of staff day-wise.

Monday - Alice, Betty, Dorothy, Emmy (except first Monday)

Tuesday - Betty, Carol, Dorothy, Emmy

Wednesday - Alice, Carol, Dorothy, Emmy

Thursday - Betty, Dorothy, Emmy (except first Thursday)

Friday - Alice, Betty, Emmy

Saturday - Betty, Dorothy, Emmy

Betty and Dorothy are available on all Thursday. Emmy is also available on Thursdays, except first Thursday. Hence, on first Thursday it will be impossible to conduct the work.

=====

Brain Teaser No : 00849

In the General meeting of "Friends Club", Sameer said, "The repairs to the Club will come to a total of Rs 3120 and I propose that this amount should be met by the members, each paying an equal amount."

The proposal was immediately agreed. However, four members of the Club chose to resign, leaving the remaining members to pay an extra Rs 26 each.

How many members did the Club originally have?

Answer

The Club originally had 24 members.

Assume that there were initially N members.

As 4 members resigned and remaining members paid Rs 26 each, it means that total amount of 4 members is equal to Rs 26 each from remaining (N-4) members. Thus,

$$4 * (3120 / N) = 26 * (N - 4)$$

$$12480 = 26N2 - 104N$$

$$26N2 - 104N - 12480 = 0$$

Solving the quadratic equation we get N=24.

Hence, the Club originally had 24 members.

=====

Brain Teaser No : 00027

Find the smallest number such that if its rightmost digit is placed at its left end, the new number so formed is precisely 50% larger than the original number.

Answer

The answer is 285714.

If its rightmost digit is placed at its left end, then new number is 428571 which is 50% larger than the original number 285714.

The simplest way is to write a small program. And the other way is trial and error !!!

=====

Brain Teaser No : 00028

There are 10 boxes containing 10 balls each. 9 boxes contain 10 balls of 10 kg each and one box contains 10 balls of 9 kg each. Tool is available for proper weighing. How can you find out the box containing 9 kg balls?

You are allowed to weigh only once. You can remove balls from the boxes. All balls are of same size and color.

Answer

1. Mark the boxes with numbers 1, 2, 3, 4, ... upto 10
2. Take 1 ball from box 1, take 2 balls from box 2, take 3 balls from box 3, take 4 balls from box 4 and so on
3. Put all of them on the scale at once and take the measurement.
4. Now, subtract the measurement from 550 ($1*10 + 2*10 + 3*10 + 4*10 + 5*10 + 6*10 + 7*10 + 8*10 + 9*10 + 10*10$)
5. The result will give you the box number which has a ball of 9 Kg

=====

Brain Teaser No : 00074

At University of Probability, there are 375 freshmen, 293 sophomores, 187 juniors, & 126 seniors. One student will randomly be chosen to receive an award.

What percent chance is there that it will be a junior? Round to the nearest whole percent.

Answer

19%

This puzzle is easy. Divide the number of juniors (187) by the total number of students (981), & then multiply the number by 100 to convert to a percentage.

Hence the answer is $(187/981)*100 = 19\%$

=====

Brain Teaser No : 00279

To move a Safe, two cylindrical steel bars 7 inches in diameter are used as rollers. How far will the safe have moved forward when the rollers have made one revolution?

Submitted by : Calon

Answer

The safe must have moved 22 inches forward.

If the rollers make one revolution, the safe will move the distance equal to the circumference of the roller. Hence, the distance covered by the safe is

$$= \text{PI} * \text{Diameter (or } 2 * \text{PI} * \text{Radius)}$$

$$= \text{PI} * 7$$

$$= 3.14159265 * 7$$

$$= 21.99115$$

$$= 22 \text{ inches approx.}$$

=====

Brain Teaser No : 00299

Substitute digits for the letters to make the following Division true

$$\begin{array}{r}
 \text{Y F Y} \\
 \text{-----} \\
 \text{A Y} \mid \text{N E L L Y} \\
 \quad \mid \text{N L Y} \\
 \text{-----} \\
 \text{P P L} \\
 \text{P N H} \\
 \text{-----} \\
 \text{N L Y} \\
 \text{N L Y} \\
 \text{-----} \\
 \text{0 0 0}
 \end{array}$$

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter N, no other letter can be 3 and all other N in the puzzle must be 3.

Submitted by : Calon

Answer

See the pattern of the Y. $AY * Y = NLY$ i.e. Y is multiplied by Y and the last digit of the answer is also Y. Thus, the value of Y would be 5 or 6.

Also,

$$H=0 \text{ as } L - H = L$$

$$P = 2N \text{ as } P - N = N$$

$$L - Y = P = 2N$$

$$E - L = p$$

Let's find out the minimum possible values. If $N=1$, then $P=2$, $Y=5$, $L=7$ and $E=9$. Note that the value of Y can not be 6 as it makes $L=8$ and $E=10$ which is not possible. Hence, $Y=5$, $N=1$, $P=2$, $L=7$, $E=9$, $H=0$

Now, using trial-n-error or rather solving $F*AY=PNH$, we get $F=6$ and $A=3$.

$$\begin{array}{r}
 \text{5 6 5} \\
 \text{-----} \\
 \text{3 5} \mid \text{1 9 7 7 5} \\
 \quad \mid \text{1 7 5} \\
 \text{-----} \\
 \text{2 2 7} \\
 \text{2 1 0} \\
 \text{-----} \\
 \text{1 7 5} \\
 \text{1 7 5} \\
 \text{-----} \\
 \text{0 0 0}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{Y F Y} \\
 \text{-----} \\
 \text{A Y} \mid \text{N E L L Y} \\
 \quad \mid \text{N L Y} \\
 \text{-----} \\
 \text{P P L} \\
 \text{P N H} \\
 \text{-----} \\
 \text{N L Y} \\
 \text{N L Y} \\
 \text{-----} \\
 \text{0 0 0}
 \end{array}$$

=====
Brain Teaser No : 00332

What are the next two numbers in the following series:

1, 1, 2, 6, 24, 20, 20, 40, 20, 80, ?, ?

Submitted by : Kevin

Answer

The next two numbers in the series are 00 and 00.

The pattenen is - last 2 digits i.e. the units and tens digits of the factorial of the integers, starting from 0.

First number = $0! = 1$

Second number = $1! = 1$
 Third number = $2! = 2$
 Fourth number = $3! = 6$
 Fifth number = $4! = 24$
 Sixth number = $5! = 120 = 20$
 Seventh number = $6! = 720 = 20$
 Eighth number = $7! = 5040 = 40$
 Ninth number = $8! = 40320 = 20$
 Tenth number = $9! = 362880 = 80$
 Eleventh number = $10! = 3628800 = 00$
 Twelveth number = $11! = 39916800 = 00$

Hence, the next two numbers in the series are 00 and 00.
 Also, note that all next numbers in the given series are 00.

=====

Brain Teaser No : 00420

Examine the following sequence of numbers.

1
 11
 21
 1211
 111221
 312211
 13112221
 1113213211
 31131211131221

What are the next two numbers in the given series?

Answer

The next two numbers are 13211311123113112211 and 11131221133112132113212221.
 Each number is a detailed description of the previous number.
 Second number describes first number as one one i.e. 11
 Third number describes second number as two ones i.e. 21
 Fourth number describes third number as one two, one one i.e. 1211
 Fifth number describes fourth number as one one, one two, two ones i.e. 111221
 Sixth number describes fifth number as three ones, two twos, one one i.e. 312211
 Following the same, the next two numbers are 13211311123113112211 and
 11131221133112132113212221

=====

Brain Teaser No : 00016

At what time after 4.00 p.m. is the minutes hand of a clock exactly aligned with the hour hand?

Answer

4:21:49.5

Assume that X minutes after 4.00 PM minute hand exactly aligns with and hour hand.

For every minute, minute hand travels 6 degrees.

Hence, for X minutes it will travel $6 * X$ degrees.

For every minute, hour hand travels $1/2$ degrees.

Hence, for X minutes it will travel $X/2$ degrees.

At 4.00 PM, the angle between minute hand and hour hand is 120 degrees. Also, after X minutes, minute hand and hour hand are exactly aligned. So the angle with respect to 12 i.e. Vertical Plane will be same. Therefore,

$$6 * X = 120 + X/2$$

$$12 * X = 240 + X$$

$$11 * X = 240$$

X = 21.8182

X = 21 minutes 49.5 seconds

Hence, at 4:21:49.5 minute hand is exactly aligned with the hour hand.

=====

Brain Teaser No : 00045

A class of 100 students. 24 of them are girls and 32 are not. Which base am I using?

Answer

Let the base be X.

Therefore

$$(X \cdot X + X \cdot 0 + 0) = (2 \cdot X + 4) + (3 \cdot X + 2)$$

$$X \cdot X = 5 \cdot X + 6$$

$$X \cdot X - 5 \cdot X - 6 = 0$$

$$(X-6)(X+1) = 0$$

Therefore base is 6

=====

Brain Teaser No : 00067

Two planes take off at the same exact moment. They are flying across the Atlantic. One leaves New York and is flying to Paris at 500 miles per hour. The other leaves Paris and is flying to New York at only 450 miles per hour (because of a strong head wind). Which one will be closer to Paris when they meet?

Answer

They will both be the same distance from Paris when they meet!!!

=====

Brain Teaser No : 00119

Next number in the series is 1, 2, 4, 13, 31, 112, ?

Answer

224

A tough one. But analyse the series carefully. No number has digits more than 4. So try to convert them to decimal numbers from base 5 numbers. (just try that) So it turns out to be: 1, 2, 4, 8, 16, 32, ?

Got it !!! Next number should be 64. But all numbers in actual series are base 5 numbers So convert 64 to base 5 and that is 224.

=====

Brain Teaser No : 00374

A, B, C and D are related to each other.

* One of the four is the opposite sex from each of the other three.

* D is A's brother or only daughter.

* A or B is C's only son.

* B or C is D's sister.

How are they related to each other?

Answer

A, B & D are males; C is female. B is C's only son. A & D are C's brothers.

A(male) --- C(female) --- D(male)

|

|
B(male)

Work out which relation can hold and discard the contradictory options.

From (2) and (4), D can not be a only daughter and have a sister (B or C). Hence, D is A's brother i.e. D is a Male.

From (4), let's say that B is D's sister i.e. B is Female.

From (3), A is C's only son i.e. A is Male.

But D is A's brother which means that A is not C's only son. Hence, our assumption was wrong.

Thus, C is D's sister i.e. C is Female. And B must be C's only son.

Now it is clear that D & B are Males and C is Female. A must be a Male as only one of them is of opposite sex from each of the other three. And he is C & D's brother.

=====

Brain Teaser No : 00404

At the party there were 19 females, 12 males, 14 adults and 17 children. Then I arrived and the number of different man-woman couples possible became equal to the number of boy-girl couples possible.

Who am I - a man, a woman, a boy or a girl?

Note that if there were 9 boys and 8 girls at the party, then there would have been 72 (9x8) boy-girl couples possible.

Answer

I am a Girl and there were 9 men, 5 women, 3 boys and 14 girls before I arrived at the party.

Before I arrived, let M be the number of male adults (men) at the party.

Then, the number of female adults (women) = 14 - M

The number of boys = 12 - M

The number of girls = 5 + M

Now, I arrived at the party and I am either a man or a woman or a boy or a girl. Let's consider each case one-by-one.

Case I: Let's assume that I am a Man. It is given that after I arrived, the number of different man-woman couples possible became equal to the number of boy-girl couples possible. Hence,

$$\begin{aligned}(M + 1) * (14 - M) &= (12 - M) * (5 + M) \\ 14M - M^2 + 14 - M &= 60 + 12M - 5M - M^2 \\ 13M + 14 &= 60 + 7M \\ 6M &= 46\end{aligned}$$

This is impossible as the value of M must be integer.

Case II: Let's assume that I am a woman, then the equation is

$$\begin{aligned}(M) * (15 - M) &= (12 - M) * (5 + M) \\ 15M - M^2 &= 60 + 12M - 5M - M^2 \\ 15M &= 60 + 7M \\ 8M &= 60\end{aligned}$$

This is also impossible as the value of M must be integer.

Case III: Let's assume that I am a boy, then the equation is

$$\begin{aligned}(M) * (14 - M) &= (13 - M) * (5 + M) \\ 14M - M^2 &= 65 + 13M - 5M - M^2 \\ 14M &= 65 + 6M \\ 8M &= 65\end{aligned}$$

This is also impossible as the value of M must be integer.

Case IV: Let's assume that I am a girl, then the equation is

$$\begin{aligned}(M) * (14 - M) &= (12 - M) * (6 + M) \\ 14M - M^2 &= 72 + 12M - 6M - M^2 \\ 14M &= 72 + 6M \\ 8M &= 72 \\ M &= 9\end{aligned}$$

Thus, I am a Girl and there were 9 men, 5 women, 3 boys and 14 girls before I arrived at the party.

=====

Brain Teaser No : 00038

The population of an island consists of two and only two types of people : the knights, who invariably tell the truth and the knaves who always lie.

* three of the inhabitants called X, Y and Z were standing together. A newcomer to the island asked, "Are you a knight or a knave?" X mumbled his answer rather indistinctly, so the stranger could not quite make out what he had said. The stranger then asked Y, "What did X say?" Y replied, "X said that he was a knave." Whereupon Z said, "Don't believe Y, he's lying." What are Y and Z?

* Suppose that the stranger asked X, instead, "How many knights among you?" Again X replies indistinctly. So the stranger asks Y, "What did X say?" Y replies, "X said that there is one knight among us." Then Z says, "Don't believe Y, he is lying!" Now what are Y and Z?

* There are only two inhabitants, X and Y. X says, "At least one of us is a knave." What are X and Y?

* Suppose X says, "Either I am a knave, or Y is a knight?" What are X and Y?

* Consider once more X, Y and Z each of who is either a knight or a knave. X says, "All of us are knaves." Y says, "Exactly one of us is a knight." What are X, Y and Z?

Answer

Teaser 1 : A Simple one. The statement made by Y is false - "X said that he was a knave".

Case 1 Case 2 Case 3 Case 4
X Knight Knight Knave Knave
Y Knight Knave Knight Knave

Analyse the above 4 cases. In all the cases statement made by Y is contradictory and therefore false. Hence, Y is Knave and Z is Knight.

Teaser 2 : Again the statement made by Y is false - "X said that there is one knight among us". Analyse these statement with 4 possible cases as above. In all the cases statement made by Y is false. Hence, Y is Knave and Z is Knight.

Teaser 3 : X is Knight and Y is Knave.

Teaser 4 : Both are Knight.

Teaser 5 : X and Z are Knaves, Y is Knight.

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Brain Teaser No : 00109

There were two men standing on a street. The one says to the other, "I have 3 daughters, the product of their ages is 36. What is the age of the OLDEST daughter?"

The second guy says, "I need more information." So, the first guy says, "The sum of their ages is equal to the address of the house across the street."

The second guy looks at the address and says, "I still need more information." So, the first guy says, "My oldest daughter wears a red dress."

Answer

The answer is 9 years.

First you need to find all the possible sets of three numbers that when multiplied equals 36:

1 1 36
1 2 18
1 3 12
1 4 9
1 6 6
2 2 9
2 3 6
3 3 4

Then you add the numbers together to find the sum

1 1 36 = 38
1 2 18 = 21
1 3 12 = 16
1 4 9 = 14
1 6 6 = 13
2 2 9 = 13
2 3 6 = 11
3 3 4 = 10

Even though we don't know the address the guy knows it. For him to need more information that means that at least two of the sets of numbers has the same sum. Two of them do, 1 6 6 and 2 2 9.

When the first guy said that his OLDEST daughter wears a red dress that meant that there had to be the oldest. So 1 6 6 can't possibly be the answer. So the possible possibility is 2 2 9 and the OLDEST daughter is 9 years old.

Therefore, the answer is 9.

=====

Brain Teaser No : 00281

On Sunday, December 22, four ships - W, X, Y, Z - started their series of winter cruises to various ports.

* Ship W left at 4:00 PM on Sunday, December 22, for a series of 8-days cruises to Mandva.

* Ship X left at 4:30 PM on Sunday, December 22, for a series of alternating 11-days and 13-days cruises to Alibaug.

* Ship Y left at 5:00 PM on Sunday, December 22, for a series of 5-days cruises to Kihim.

* Ship Z left on Monday for a series of 7-days cruises.

Each ship is scheduled to return back early in the morning after the last day of the cruise and leave again late in the afternoon of the same day.

On how many days occasions between December 22 and February 28 will three ships be moored at the port?

Answer

On no occasions (other than start date December 22) between December 22 and February 28, three ships will be moored at the port.

Find out the days on when each ship will be in port:

- * Ship W will be in port on days 1, 9, 17, 25, 33, 41, 49, 57 and 65.
- * Ship X will be in port on days 1, 12, 25, 36, 49, 60 and 73.
- * Ship Y will be in port on days 1, 6, 11, 16, 21, 26, 31, 36, 41, 46, 51, 56, 61 and 66.
- * Ship Z will be in port on days 1, 2, 9, 16, 23, 30, 37, 44, 51, 58 and 65.

From above data, it is clear that - on no occasion (other than December 22) will three ships be moored at the port.

Also, on 8 occasions, there will be 2 ships moored at the port.

=====

Brain Teaser No : 00286

There are 4 army men. They have been captured by a rebel group and have been held at ransom. An army intelligent officer orders them to be burried deep in dirt up to their necks. The format of their burrial are as shown in the figure.

Conditions

- * They each have hats on their heads. either black(b) or white (w) look at diagram above. There are total 2 white hats and 2 black hats.
- * They only look in front of them not behind. They are not allowed to communicate by talking.
- * Between army man 1 and 2, there is a wall.
- * Captive man 4 can see the colour of hats on 2 and 3
- * 3 can only see 2's hat
- * 2 can only see a wall and 1 can see a wall too, but is on the other side

The officer speaks up, "If one of you can correctly tell me the colour of your hat, you will all go scott free back to your contries. If you are wrong, you will all be killed.

How can one of them be certain about the hat they are wearing and not risk the lives of their fellow souldiers by taking a 50/50 guess!

Submitted by : KWEKU

Answer

Either soldier 3 or soldier 4 can save the life as soldier 1 and soldier 2 can not see colour of any hat, even not their own.. In our case soldier 3 will tell the colour of his hat.

Soldier 4 can see the hat on soldier 2 and soldier 3. If both are white, then he can be sure about colour of his hat which will be black and vice-versa. But if one of them is white and one is black, then soldier 4 can not say anything as he can have either of them. So he will keep mum.

If soldier 4 won't say anything for a while, then soldier 3 will know that soldier 4 is not in position to tell the colour of hat on his hat. It means that colour of soldier 3's hat is opposite of colour of soldier 2's hat. So soldier 3 can tell correctly the colour of hat on his head which is Black.

Here, we are assuming that all the soldiers are intelligent enough. Also, this solution will work for any combination of 2 Black hats and 2 White hats.

=====

Brain Teaser No : 00384

I was sitting around with my friend Dave, Marty and James recently. I happened to have two tickets to a new movie in my pocket that I had just purchased. I mentioned that there were two four-digit numbers on the tickets and that the sum of all 8 digits was 25. Dave asked if any digit appeared more out of the 8, which I answered. Then, Marty asked if the sum of the digits of either ticket was equal to 13, which I answered too. Much to my surprise James immediately told me what the two numbers were! What were they?

Answer

Ticket numbers were 1299 and 1300.
The first thing James realized was that the tickets were consecutively numbered.

There are 4 possible cases:

1. ABCD and ABC(D+1)
2. ABC9 and AB(C+1)0
3. AB99 and A(B+1)00
4. A999 and (A+1)000

If the tickets were numbered ABCD and ABC(D+1) and my answer to Marty's question had been "YES", the only conclusion James could have reached would have been that $A+B+C+D=12$, and regardless of my answer to Dave's question there would not have been a unique solution. So my answer to Marty's question must have been "NO". It follows that the tickets could not have been numbered in this manner.

If the numbers were ABC9 and AB(C+1)0, we would have $2A+2B+2C+10=25$, and so $2(A+B+C)=15$, which is impossible.

If the numbers were AB99 and A(B+1)00, we would have $2A+2B+19=25$ or $A+B=3$, leading to the four possibilities (0399 and 0400), (1299 and 1300), (2199 and 2200), (3099 and 3100). Of these, three of them would have had me answer "YES" to Dave's question (if any digit appeared more?), and only the pair (1299 and 1300) would have had me answer "NO". It follows that these were my ticket numbers i.e. (1299 and 1300)

Similarly, if the numbers were A999 and (A+1)000, we would have $2A + 28 = 25$, which is again impossible.

Thus, my ticket numbers were 1299 and 1300.

=====

Brain Teaser No : 00215

Sam and Mala have a conversation.

- * Sam says I am certainly not over 40
- * Mala says I am 38 and you are atleast 5 years older than me
- * Now Sam says you are atleast 39

All the statements by the two are false. How old are they really?

Answer

Sam is 41 and Mala is 37.

Let's invert the teaser and read it like this :

- * Sam says I am certainly over 40
- * Mala says I am not 38 and you are atmost 4 years older than me
- * Now Sam says you are atmost 38

From first statement it is clear that Sam is over 40. Also, from next 2 statements it is clear that Mala is less then 38. Hence the possibilities are :

Sam = 41, 42, 43, 44, 45,

Mala = 37, 36, 35, 34, 33,

It also says that the difference between their age is maximum 4 years. Hence, there is only one possible pair i.e. 41 and 37, all other combination have differences more than 4. Hence the answer - Sam is 41 and Mala is 37.

=====

Brain Teaser No : 00292

Mr. Black, Mr. White and Mr. Grey were chatting in the Yahoo conference. They were wearing a black suit, a white suit and a grey suit, not necessarily in the same order. Mr. Grey sent message, "We all are wearing suit that are of the same color as our names but none of us is wearing a suit that is the same color as his name." On that a person wearing the white suit replied, "What difference does that make?" Can you tell what color suit each of the three persons had on?

Answer

Mr. Grey is wearing Black suit.
Mr. White is wearing Grey suit.
Mr. Black is wearing White suit.
Mr. Grey must not be wearing grey suit as that is the same colour as his name. Also, he was not wearing white suit as the person wearing white suit responded to his comment. So Mr Grey must be wearing a black suit.
Similarly, Mr. White must be wearing either black suit or grey suit. But Mr. Grey is wearing a black suit. Hence, Mr. White must be wearing a grey suit.
And, Mr. Black must be wearing white suit.

=====

Brain Teaser No : 00071

In training for a competition, you find that swimming downstream (with the current) in a river, you can swim 2 miles in 40 minutes, & upstream (against the current), you can swim 2 miles in 60 minutes.
How long would it take you to swim a mile in still water?

Answer

You are able to swim downstream at 3 miles an hour, & upstream at 2 miles an hour. There is a difference of 1 mile an hour, which is the river helping you in 1 direction, & slowing you in the other direction.
Average the 2 rates, & you have the rate that you can swim in still water, which is 2.5 miles an hour.
You can thus swim a mile in still water in 24 minutes.

=====

Brain Teaser No : 00258

Three convicts are brought into the warden's office. He says he can parole one of them and to decide which one he will parole he takes out 5 hats (3 red and 2 white). He stands behind them and places a hat on each one of their heads and puts the other two remaining hats in a drawer.
He tells the prisoners they can look at the others hats and if they can tell which hat they have on they will be the one who is paroled.
The first man looks at the other two and says, "I don't know."
The second man looks at the others hats and says, "I don't know."
The third man who is blind says, "Even though I have not the gift of sight I can tell by what the others have said that the color of my hat is..."
What color is the blind mans hat and how does he know?

Submitted by : Anne Hanna

Answer

The color of blind man's hat is Red.

It is sure that the first man saw either both Red hats or one White hat and one Red hat. There are 6 such possibilities:

- 1) R R R
- 2) R R W
- 3) R W R
- 4) W R R
- 5) W R W
- 6) W W R

In all above possibilities, the first man won't be sure of the color of his hat.

Now, the second man knows that the first man saw either both Red hats or one White hat and one Red hat. And, he also knows that its one of the above 6 possibilities. (like we know ;)) But he says, "I don't know". That means that (2) and (5) are not the possibilities as in either case he would be sure of the color of his hat (Red) by just looking at the third man's color of hat (White).

Now, the blind man knows that there are just 4 possibilities - (1), (3), (4), (6) - and in all, the color of his hat is Red.

=====

Brain Teaser No : 00433

Annie, Bunnie, Candy and Dina visited Edy on 14th February.

1. The time of each visit was as follows:
 - Annie at 8:00
 - Bunnie at 9:00
 - Candy at 10:00
 - Dina at 11:00

Each time mentioned above may be either AM or PM.

2. Candy did not visit Edy between Bunnie and Dina.
3. At least one female visited Edy between Annie and Bunnie.
4. Annie did not visit Edy before both Candy and Dina.

Can you tell at what time did they individually visit Edy?

Answer

Bunnie (9:00AM) - Dina (11:00AM) - Annie (8:00PM) - Candy (10:00PM)

From the given data, it is clear that at least one female visited Edy in the morning and at least one female visited Edy in the evening. Also, from (4), Annie did not visit Edy first. It means that Annie visited Edy at 8:00 PM

From (3), Bunnie must have visited Edy at 9:00 AM. Also, either Candy or Dina or both visited Edy in the morning.

But from (2), only Dina must have visited Edy in the morning at 11:00 AM and hence, Candy visited Edy at 10:00 PM.

The order of visits must be:

Bunnie (9:00AM) - Dina (11:00AM) - Annie (8:00PM) - Candy (10:00PM)

=====

Brain Teaser No : 00179

I bet you Rs. 100 that if you give me Rs. 200, I will give you Rs. 300 in return. Would you bet with me? Why?

Answer

No, you should not bet.

Let's say you bet and you gave Rs. 200 to me. Now there are 2 possibilities.

CASE I - I will give you Rs. 300

If I give you Rs. 300, then I will win Rs. 100 bet. Thus, you have to give me Rs. 100. This is NO WIN NO LOSE case.

CASE II - I won't give you Rs. 300

If I won't give you Rs. 300, then I will lose Rs. 100 bet. Thus, I have to give you Rs. 100 which I will give you with smile :-) (of course, from Rs. 200 you gave me initially) Here, I will make Rs. 100 and you will lose Rs. 100
So the moral - you should not bet !!!

=====

Brain Teaser No : 00230

A sheet of paper has statements numbered from 1 to 100. Statement N says "Exactly N of the statements on this sheet are false."
How many statements are true?

Answer

Only One statement is true - Statement 99

If they are all false, statement 100 would be true i.e. "Exactly 100 of the statements on this sheet are false", which is contradictory.

If total of 99 statements are false, statement 99 would be true i.e. "Exactly 99 of the statements on this sheet are false". That's the answer - total 99 statements are false, and statement 99 is true.

Try out for all remaining statements, they all will contradict itself.

=====

Brain Teaser No : 00329

Three Gold (G) coins, three Silver (S) coins and three Copper (C) coins are arranged in a single row as follow:

G S C G S C G S C

* Only 2 adjacent unlike coins can be moved at any one time.

* The moved coins must be in contact with at least one other coin in line. i.e. no pair of coins is to be moved and placed away from the remaining ones.

* No coin pairs can be reversed i.e. a S-C combination must remain in that order in its new position when it is moved.

What is the minimum number of moves required to get all the coins in following order?

C C C S S S G G G

Show all moves.

Answer

Minimum number of moves are 8.

Move Order of Coins

0 G S C G S C G S C
1 G S G S C G S C C
2 G S C G S C C S G
3 G S C G S C C S G
4 G S C C S G S C G
5 G S C C S C S G G
6 G S C C C S S G G
7 C C C S S G G S G
8 C C C S S S G G G

Brain Teaser No : 00341

What is the next number in the given series?

10^3 , 10^9 , 10^{27} , 10^2 , 0, 4, 8, 3, ?

Note that 10^3 means 10 raised to the power of 3 i.e. 1000.

Answer

A tough one !!!

The next number in the series is 5.

The pattern is - the series of numbers containing first letter of the English alphabet starting from "A".

10³ = one thousAnd
10⁹ = one Billion
10²⁷ = one oCtillion
10² = one hunDreD
0 = zEro
4 = Four
8 = eiGht
3 = tHree
5 = fIve

Brain Teaser No : 00001

At what time immediately prior to Six O'clock the hands of the clock are exactly opposite to each other. Give the exact time in hours, minutes and seconds.

Answer

It is obvious that between 5 O'clock and 6 O'clock the hands will not be exactly opposite to each other. It is also obvious that the hands will be opposite to each other just before 5 O'clock. Now to find exact time:

The hour hand moves 1 degree for every 12 degrees that the minute hand moves. Let the hour hand be X degree away from 5 O'clock. Therefore the minute hand is 12X degree away from 12 O'clock.

Therefore solving for X

Angle between minute hand and 12 O'clock + Angle between 12 O'clock and 4 O'clock + Angle between 4 O'clock and hour hand = 180

$$12X + 120 + (30 - X) = 180$$

$$11X = 30$$

Hence X = 30/11 degrees

(hour hand is X degree away from 5 O'clock)

Now each degree the hour hand moves is 2 minutes.

Therefore minutes are

$$= 2 * 30/11$$

$$= 60/11$$

$$= 5.45 \text{ (means 5 minutes 27.16 seconds)}$$

Therefore the exact time at which the hands are opposite to each other is

$$= 4 \text{ hrs. } 54 \text{ min. } 32.74 \text{ seconds}$$

Brain Teaser No : 00445

Dr. DoLittle always goes walking to the clinic and takes the same time while going and while coming back. One day he noticed something.

When he left the home, the hour hand and the minute hand were exactly opposite to each other and when he reached the clinic, they were together.

Similarly, when he left the clinic, the hour hand and the minute hand were together and when he reached the home, they were exactly opposite to each other.

How much time does Dr. DoLittle take to reach home from the clinic? Give the minimal possible answer.

Answer

32 minutes 43.6 seconds

In twelve hours, the minute hand and the hour hand are together for 11 times. It means that after every $12/11$ hours, both the hands are together.

Similarly in twelve hours, the minute hand and the hour hand are exactly opposite to each other for 11 times. It means that after every $12/11$ hours, both the hands are opposite.

Now, let's take an example. We know that at 12 both the hands are together and at 6 both the hands are exactly opposite to each other.

After 6, both the hands are in opposition at $[6+(12/11)]$ hours, $[6+2*(12/11)]$ hours, $[6+3*(12/11)]$ hours and so on. The sixth such time is $[6+6*(12/11)]$ hours which is the first time after 12. Thus after 12, both the hands are opposite to each other at 12:32:43.6 Hence, Dr. DoLittle takes 32 minutes and 43.6 seconds to reach home from the clinic.

=====

Brain Teaser No : 00178

Vipul was studying for his examinations and the lights went off. It was around 1:00 AM. He lighted two uniform candles of equal length but one thicker than the other. The thick candle is supposed to last six hours and the thin one two hours less. When he finally went to sleep, the thick candle was twice as long as the thin one.

For how long did Vipul study in candle light?

Answer

Vipul studied for 3 hours in candle light.

Assume that the initial length of both the candle was L and Vipul studied for X hours.

In X hours, total thick candle burnt = $XL/6$

In X hours, total thin candle burnt = $XL/4$

After X hours, total thick candle remaining = $L - XL/6$

After X hours, total thin candle remaining = $L - XL/4$

Also, it is given that the thick candle was twice as long as the thin one when he finally went to sleep.

$$(L - XL/6) = 2(L - XL/4)$$

$$(6 - X)/6 = (4 - X)/2$$

$$(6 - X) = 3*(4 - X)$$

$$6 - X = 12 - 3X$$

$$2X = 6$$

$$X = 3$$

Hence, Vipul studied for 3 hours i.e. 180 minutes in candle light.

=====

Brain Teaser No : 00198

Once a week a wagon driver leaves his hut and drives his wagon to the river dock to pick up supplies for his town. At 4:05 PM, one-fifth of the way to the dock, he passes the Temple.

At 4:15 PM, one-third of the way, he passes the Preetam-Da-Dhabaa.

At what time does he reached the dock?

Answer

5:05 PM

At 4:05 PM, the wagon driver passes the temple, one-fifth of the way to the dock. Also, at 4:15 PM, he passes the Preetam-Da-Dhabaa, one-third of the way. Thus, he travels $2/15$ ($1/3 - 1/5$) of the distance in 10 minutes.

At 4:15 PM, he has already travelled $1/3$ of the distance. Thus $2/3$ of the way is remaining, which can be travelled in

$$= ((2/3) * 10) / (2/15)$$

$$= 50 \text{ minutes}$$

At 4:15, he was at Preetam-Da-Dhabaa.and remaining way will take 50 more minutes. Hence, the driver will reach at 5:05 PM to the dock.

=====

Brain Teaser No : 00365

If the day before two days after the day before tomorrow is Monday, what is today?
Submitted by : Ryan Ellis

Answer

Today is Sunday.

"the day before tomorrow" is today. Hence, the question can be re-written as "If the day before two days after today is Monday, what is today?"

Also, "the day before two days after today" is tomorrow. Thus, the question is "If tomorrow is Monday, what is today?"

Thus, today is Sunday.

=====

Brain Teaser No : 00253

SkyFi city is served by 6 subway lines - A, E, I, O, U and Z.

* When it snows, morning service on line E is delayed.

* When it rains or snows, service on the lines A, U and Z is delayed both morning and afternoon.

* When the temperature drops below 20 C, afternoon service is cancelled on either line A or line O, but not both.

* When the temperature rises above 40 C, afternoon service is cancelled on either line I or line Z, but not both.

* When service on line A is delayed or cancelled, service on line I is also delayed.

* When service on line Z is delayed or cancelled, service on line E is also delayed.

On February 10, it snows all day with the temperature at 18C. On how many lines service will be delayed or cancelled, including both morning and afternoon?

Answer

The service will be delayed or cancelled on 5 lines - A, E, I, U and Z except line O. Go through each statement and cross the subway line with delayed or cancelled service. It is given that it snows all day with the temperature at 18C.

From (1), line E is delayed.

From (2), line A, U and Z are delayed.

From (3), either line A or line O is cancelled.

From (5), line I is delayed because of line A delay.

From (6), line E is delayed because of line Z delay.

As service on line A is delayed, service on line O can not be. Hence, service will be delayed or cancelled on 5 lines - A, E, I, U and Z except line O.

=====

Brain Teaser No : 00400

Mr. and Mrs. Birla & Mr. and Mrs. Tata competed in a Chess tournament. Of the three games played:

1. In only the first game were the two players married to each other,
2. The men won two games and the women won one game.
3. The Birlas won more games than the Tatas.
4. Anyone who lost a game did not play a subsequent game.

Who did not lose a game?

Answer

Mrs. Tata did not lose a game.

List out all the possibilities and remove the possibilities which contradict the given conditions.

There are only 3 possibilities:

1. Mr. Birla won one game, Mrs. Birla won one game and Mr. Tata won one game.
2. Mr. Birla one two games and Mrs. Birla won one game.
3. Mr. Birla won two games and Mrs. Tata won one game.

If (I) is correct, then Mr. Tata beats Mrs. Tata in the first game. Then Mr. Tata would have lost to either Mr. Birla or Mrs. Birla in the second game. And Mr. and Mrs. Birla would have played the third game which contradicts the statement (1). So (I) is not correct.

Similarly, (II) is not correct.

(III) is correct. Mr. and Mrs. Birla played the first game and Mr. Birla won the game. Mr. Birla won the second game against Mr. Tata and lost the third game against Mrs. Tata. Thus, only Mrs. Tata did not lose a game.

=====

Brain Teaser No : 00440

Eight players participated in the recent BOOM Chess Tournament.

Each player played all of the others exactly once. The winner of a game received 1 point and a loser 0; draws are allowed, giving each player 1/2 point.

Now, it turned out that everyone received a different number of points. Furthermore, Sujay, who came in second, earned as many points as the four bottom finishers put together.

What was the result of the game between Parag, who came in third, and Manav, who came in fifth?

Answer

Parag beat Manav.

Let $X(i)$ be the score of the person who finished in i th place.

It is clear that $X(2)$ cannot be 7. If $X(2) = 6.5$, then this would imply that $X(1) = 7$. But then first person would have beaten everyone. Hence, $X(2)$ cannot be 6.5. Then $X(2) = 6$.

Since it is given that second person earned as many points as the four bottom finishers put together, $X(5) + X(6) + X(7) + X(8) = X(2) = 6$

Now players 5, 6, 7 and 8 played exactly 6 games among themselves. It means that neither player 5, 6, 7 or 8 could have beaten or tied any of players 1, 2, 3 or 4. Otherwise, this sum would be greater than 6.

Thus, it is obvious that Parag beat Manav.

=====

Brain Teaser No : 00505

Pappu, Nandu, Mamu and Chhoti participated in a POOL competition.

FACTS

1. There are total of 15 balls.
2. For each ball potted, the player will receive one point.
3. They all will play each other once.
4. A game will end when all the balls are potted.
5. The winner will be the player who scored the most points.

OUTCOMES

1. Chhoti finished with 18 points.
2. Pappu finished with odd number of points.
3. Mamu beat Chhoti by 5 points in the match between them.
4. There was one point difference in match between Nandu and Pappu.
5. Pappu scored twice as many points as Mamu in their game.
6. Chhoti scored one point less against Pappu than he did against Mamu.
7. Mamu scored 7 points against Nandu.

Who won the competition? How many points did each player score?

Answer

Let's put all the given information in a tabular format.

Players	P-N	P-M	P-C	N-M	N-C	M-C	Total	
Pappu	7	or 8	10	11	---	---	---	Odd points
Nandu	8	or 7	---	---	8	---	---	
Mamu	---	5	---	7	---	10	---	
Chhoti	---	---	4	---	5	18	---	

* As Pappu finished with odd number of points, he must have scored 8 points in the match against Nandu.

* As Chhoti finished with 18 points, he must have scored 9 points in the match against Nandu.

Players	P-N	P-M	P-C	N-M	N-C	M-C	Total
Pappu	8	10	11	---	---	---	29
Nandu	7	---	---	8	6	---	21
Mamu	---	5	---	7	---	10	22
Chhoti	---	---	4	---	9	5	18

Hence, the winner is Pappu with 29 points.

=====

Brain Teaser No : 00752

Tic-Tac-Toe is being played. One 'X' has been placed in one of the corners. No 'O' has been placed yet.

Where does the player that is playing 'O' has to put his first 'O' so that 'X' doesn't win? Assume that both players are very intelligent. Explain your answer.

Submitted by : Uyaghj

Answer

"O" should be placed in the center.

Let's number the positions as:

1		2		3

4		5		6

7		8		9

It is given that "X" is placed in one of the corner position. Let's assume that its at position 1.

Now, let's take each position one by one.

- * If "O" is placed in position 2, "X" can always win by choosing position 4, 5 or 7.
- * If "O" is placed in position 3, "X" can always win by choosing position 4, 7 or 9.
- * If "O" is placed in position 4, "X" can always win by choosing position 2, 3 or 5.
- * If "O" is placed in position 6, "X" can always win by choosing position 3, 5 or 7.
- * If "O" is placed in position 7, "X" can always win by choosing position 2, 3 or 9.
- * If "O" is placed in position 8, "X" can always win by choosing position 3, 5 or 7.
- * If "O" is placed in position 9, "X" can always win by choosing position 3, or 7.

If "O" is placed in position 5 i.e. center position, "X" can't win unless "O" does something foolish ;))

Hence, "O" should be placed in the center.

=====

Brain Teaser No : 00073

12 members were present at a board meeting. Each member shook hands with all of the other members before & after the meeting.

How many hand shakes were there?

Answer

132

Think of it this way: the first person shakes hands with 11 people, the second person also shakes hands with 11 people, but you only count 10, because the hand shake with the first person was already counted. Then add 9 for the third person, 8 for the fourth, & so on. 66 hand shakes took place before & 66 after the meeting, for a total of 132.

=====

Brain Teaser No : 00079

If you started a business in which you earned Rs.1 on the first day, Rs.3 on the second day, Rs.5 on the third day, Rs.7 on the fourth day, & so on. How much would you have earned with this business after 50 years (assuming there are exactly 365 days in every year)?

Answer

Rs.333,062,500

To begin with, you want to know the total number of days: $365 \times 50 = 18250$. By experimentation, the following formula can be discovered, & used to determine the amount earned for any particular day: $1 + 2(x-1)$, with x being the number of the day. Take half of the 18250 days, & pair them up with the other half in the following way: day 1 with day 18250, day 2 with day 18249, & so on, & you will see that if you add these pairs together, they always equal Rs.36500. Multiply this number by the total number of pairs (9125), & you have the amount you would have earned in 50 years. Math gurus may use series formula to solve it.(series: 1,3,5,7,9,11.....upto 18250 terms)

=====

Brain Teaser No : 00128

There is a perfect sphere of diameter 40 cms. resting up against a perfectly straight wall and a perfectly straight floor i.e. the wall and the floor make a perfect right angle. Can a perfect sphere of diameter 7 cms. pass through the space between the big sphere, the wall and the floor? Support your answer with valid arguments. Don't submit just "Yes" or "No".

Answer

For the sake of simplicity, consider two-dimension i.e view sphere as a two dimensional circle with diameter 40 cms.

From Figure I, (40 cms diameter sphere)
 $OC^2 = OD^2 + CD^2$
 $OC^2 = 20^2 + 20^2$
 $OC = 28.28427 \text{ cms}$

Also, X is the closest point to origin O on the sphere.
 $CX = 20 \text{ cms (radius)}$
 $OX = OC - CX$
 $OX = 28.28427 - 20$
 $OX = 8.28427 \text{ cms}$

From Figure II, (7 cms diameter sphere)
 $OP^2 = OQ^2 + PQ^2$
 $OP^2 = (3.5)^2 + (3.5)^2$
 $OP = 4.94974 \text{ cms}$

Also, Y is the farthest point to origin O on the sphere.

PY = 3.5 cms (radius)
OY = OP + PY
OY = 4.94974 + 3.5
OY = 8.44974 cms

Now, as $OY > OX$ i.e. smaller sphere requires more space than the space available. Hence, smaller sphere of 7 cms diameter can not pass through the space between the big sphere, the wall and the floor.

The puzzle can be solved by another method.

Draw a line tangent to the big sphere at the point X such that X is the closest point to the origin O on sphere. The tangent will cut X and Y axes at A and B respectively such that $OA=OB$. [See Fig III] From above, $OX=8.28427$ cms.

From the right angle triangle OAB, we can deduct that
 $OA = OB = 11.71572$ cms
 $AB = 16.56854$ cms

Now, the diameter of the inscribed circle of right angle triangle is given by $d = a + b - c$ where $a \leq b < c$

The maximum possible diameter of the circle which can pass through the space between the big sphere, the wall and the floor is
 $= OA + OB - AB$
 $= 11.71572 + 11.71572 - 16.56854$
 $= 6.86291$ cms

Hence, the sphere with 7 cms diameter can not pass through the space between the big sphere, the wall and the floor.

=====

Brain Teaser No : 00208

What are the next two numbers in the given series?
5, 6, 5, 6, 5, 5, 7, 6, ?, ?

Answer

The next two numbers are 5, 5.
The pattern is - the number of letters in the ordinal numbers.
First = 5 letters
Second = 6 letters
Third = 5 letters
Fourth = 6 letters
Fifth = 5 letters
Sixth = 5 letters
Seventh = 7 letters
Eighth = 6 letters
Ninth = 5 letters
Tenth = 5 letters
Hence, the next two numbers in the given series are 5 and 5.

=====

Brain Teaser No : 00217

Jim lies a lot. He tells the truth on only one day in a week.
One day he said: "I lie on Mondays and Tuesdays."
The next day he said: "Today is either Sunday, Saturday or Thursday."
The next day he said: "I lie on Fridays and Wednesdays."
On which day of the week does Jim tell the truth?

Answer

Jim tells the truth on Tuesday.

As Jim tells truth only on one day in a week, his statement on day 1 and day 3 both can not be false. Otherwise he tells truth on more than one days in a week. Also, all three statements are mad on three consecutive days, statement made on day 1 and day 3 both can not be true. Thus, either the statement made on day 1 or day 3 is true and other is false. Also, the statement made on day 2 must be false i.e. day 1 is not Saturday, Friday or Wednesday.

Let's assume that the statement 1 is true. Then from the statement 3, day 1 must be either Friday or Wednesday. But it is already deduced that day 1 is not Saturday, Friday or Wednesday.

Hence, the statement made on day 1 is false and the last statement is true. then from the statement 1, day 3 must be either Monday or Tuesday. But it is already deduced that day 1 can not be Saturday i.e. day 3 can't be Monday. Hence, Jim tells the truth on Tuesday.

=====

Brain Teaser No : 00231

What two numbers comes next in this series?:

1, 2, 3, 6, 7, 14, 15, 30, 31, ? ?

Submitted by : Hannah Brooks

Answer

Next two numbers are 62 and 63.

The pattern is double the number, add one, double the number, add one...

Starting with 1, for next number double the number = 2

For next number add one = 3

Again, double the number = 6

Next add one = 7 and so on ...

Now at 31, for next number double the number = 62

Add one for next number = 63

=====

Brain Teaser No : 00261

The letters P, Q, R, S, T, U and V, not necessarily in that order represents seven consecutive integers from 22 to 33.

* U is as much less than Q as R is greater than S.

* V is greater than U.

* Q is the middle term.

* P is 3 greater than S.

Can you find the sequence of letters from the lowest value to the highest value?

Answer

The sequence of letters from the lowest value to the highest value is TUSQRPV.

From (3), Q is the middle term.

___ _ _ _ Q _ _ _ _

From (4), there must be exactly 2 numbers between P and S which gives two possible positions.

[1] ___ _ S ___ Q ___ P ___ _

[2] ___ _ _ S ___ Q ___ P ___

From (1), the number of letters between U and Q must be same as the number of letters between S and R. Also, the number of letters between them can be 1, 2 or 3.

Using trial and error, it can be found that there must be 2 letters between them. Also, it is possible only in option [2] above.

[2] ___ _ U ___ S ___ Q ___ R ___ P ___

From (2) V must be the highest and the remaining T must be the lowest number.

T U S Q R P V

Thus, the sequence of letters from the lowest value to the highest value is TUSQRPV.

=====

Brain Teaser No : 00357

Three men - Sam, Cam and Laurie - are married to Carrie, Billy and Tina, but not necessarily in the same order.

Sam's wife and Billy's Husband play Carrie and Tina's husband at bridge. No wife partners her husband and Cam does not play bridge.

Who is married to Cam?

Answer

Carrie is married to Cam.

"Sam's wife and Billy's Husband play Carrie and Tina's husband at bridge."

It means that Sam is not married to either Billy or Carrie. Thus, Sam is married to Tina.

As Cam does not play bridge, Billy's husband must be Laurie.

Hence, Carrie is married to Cam.

=====

Brain Teaser No : 00050

Two identical pack of cards A and B are shuffled throughly. One card is picked from A and shuffled with B. The top card from pack A is turned up. If this is the Queen of Hearts, what are the chances that the top card in B will be the King of Hearts?

Answer

52 / 2703

There are two cases to be considered.

CASE 1 : King of Hearts is drawn from Pack A and shuffled with Pack B

Probability of drawing King of Hearts from Pack A = 1/51 (as Queen of Hearts is not to be drawn)

Probability of having King of Hearts on the top of the Pack B = 2/53

So total probability of case 1 = (1/51) * (2/53) = 2 / (51 * 53)

CASE 2 : King of Hearts is not drawn from Pack A

Probability of not drawing King of Hearts from Pack A = 50/51 (as Queen of Hearts is not to be drawn)

Probability of having King of Hearts on the top of the Pack B = 1/53

So total probability of case 2 = (50/51) * (1/53) = 50 / (51 * 53)

Now adding both the probability, the required probability is

= 2 / (51 * 53) + 50 / (51 * 53)

= 52 / (51 * 53)

= 52 / 2703

= 0.0192378

=====

Brain Teaser No : 00268

How many ways are there of arranging the sixteen black or white pieces of a standard international chess set on the first two rows of the board?

Given that each pawn is identical and each rook, knight and bishop is identical to its pair.

Submitted by : Alex Crosse

Answer

6,48,64,800 ways

There are total 16 pieces which can be arranged on 16 places in $16P16 = 16!$ ways.
($16! = 16 * 15 * 14 * 13 * 12 * \dots * 3 * 2 * 1$)
But, there are some duplicate combinations because of identical pieces.

* There are 8 identical pawn, which can be arranged in $8P8 = 8!$ ways.

* Similarly there are 2 identical rooks, 2 identical knights and 2 identical bishops.
Each can be arranged in $2P2 = 2!$ ways.
Hence, the require answer is
 $= (16!) / (8! * 2! * 2! * 2!)$
 $= 6,48,64,800$

=====

Brain Teaser No : 00287

In the village called TALAJA, only three TV channels are available - Moon Plus, Mony and Mee TV.
Out of 4000 TV viewers in the village, 1500 watch Moon TV, 2000 watch Mony and 2500 watch Mee TV.
Amongst these, 500 viewers watch Moon Plus and Mony, 800 watch Moon Plus and Mee TV, and 1000 watch Mony and Mee TV.
How many viewers watch all three channels?

Answer

300 viewers watch all three channels.
Let's assume that total X viewers watch all three channels.
total viewers who watch only Moon Plus and Mony = $500 - X$
total viewers who watch only Moon Plus and Mee TV = $800 - X$
total viewers who watch only Mony and Mee TV = $1000 - X$

total viewers who watch only Moon Plus
 $= 1500 - (500 - X) - (800 - X) - X$
 $= 200 + X$

total viewers who watch only Mony
 $= 2000 - (500 - X) - (1000 - X) - X$
 $= 500 + X$

total viewers who watch only Mee TV
 $= 2500 - (1000 - X) - (800 - X) - X$
 $= 700 + X$

We know that total viewers are 4000. Summing up all 7 values,
 $X + (500 - X) + (800 - X) + (1000 - X) + (200 + X) + (500 + X) + (700 + X) = 4000$
 $X + 3700 = 4000$
 $X = 300$

Hence, total 300 viewers watch all three channels.

=====

Brain Teaser No : 00360

Mrs. F has invited several wives of delegates to the United Nations for an informal luncheon. She plans to seat her 9 guests in a row such that each lady will be able to converse with the person directly to her left and right. She has prepared the following list.

Mrs. F speaks English only.
Mrs. G speaks English and French.
Mrs. H speaks English and Russian.
Mrs. J speaks Russian only.
Mrs. K speaks English only.
Mrs. L speaks French only.
Mrs. M speaks French and German.
Mrs. N speaks English and German.

Mrs. O speaks English only.

How many distinct seating arrangements are possible? Give all possible seating arrangements.

Note that ABCD and DCBA are the same.

Answer

126 distinct seating arrangements are possible.

Mrs. J and Mrs. H must be together and Mrs. J must be at the end as Mrs. J speaks only Russian and Mrs. H is the only other Russian speaker.

Mrs. L speaks only French and there are two others - Mrs. G and Mrs. M - who speak French. Here there are 2 cases.

* CASE A : Mrs. L is at the other end

If Mrs. L is at the other end, either Mrs. G or Mrs. M must seat next to her.

o CASE AA : Mrs. G seats next to Mrs. L

Then, Mrs. M must seat next to Mrs. G and Mrs. N must seat next to Mrs. M. This is because Mrs. M speaks French and German, and Mrs. N is the only other German speaker. Thus, the possible seating arrangement is JHxxxNMGL, where x is the English speakers. Mrs. F, Mrs. K and Mrs. O can be arranged in remaining 3 positions in 3! different ways i.e. 6 ways.

o CASE AB : Mrs. M seats next to Mrs. L

If so, then either Mrs. N or Mrs. G must seat next to Mrs. M

+ CASE ABA : Mrs. N seats next to Mrs. M

Thus, the possible seating arrangement is JHxxxxNML, where x is the English speakers. Mrs. F, Mrs. G, Mrs. K and Mrs. O can be arranged in remaining 4 positions in 4! different ways i.e. 24 ways.

+ CASE ABB : Mrs. G seats next to Mrs. M

Thus, the possible seating arrangement is JHxxxxGML, where x is the English speakers. Mrs. F, Mrs. K, Mrs. N and Mrs. O can be arranged in remaining 4 positions in 4! different ways i.e. 24 ways.

* CASE B : Mrs. L does not seat at the end

It means that Mrs. G, Mrs. L and Mrs. M must seat together. Also, Mrs. L must seat between Mrs. G and Mrs. M.

o CASE BA : Mrs. G seats left and Mrs. M seats right to Mrs. L i.e. GLM

+ CASE BAA : GLM is at the other end

Thus, the possible seating arrangement is JHxxxxGLM, where x is the English speakers. Mrs. F, Mrs. K, Mrs. N and Mrs. O can be arranged in remaining 4 positions in 4! different ways i.e. 24 ways.

+ CASE BAB : GLM is not at the other end

Then Mrs. N must seat next to Mrs. M. Now, we have a group of four GLMN where Mrs. G and Mrs. N speak English. Thus, the possible seating arrangement is JHxxxX, where x is the individual English speakers and X is the group of four females with English speakers at the both ends. Thus, there are 4! different ways i.e. 24 ways.

o CASE BB : Mrs. M seats left and Mrs. G seats right to Mrs. L i.e. MLG

Then, Mrs. N must seat next to Mrs. M. Now, we have a group of four NMLG where Mrs. G and Mrs. N speak English. Thus, the possible seating arrangement is JHxxxX, where x is the individual English speakers and X is the group of four females with English speakers at the both ends. Thus, there are 4! different ways i.e. 24 ways.

Thus, total different possible seating arrangements are :

= 6 (case AA) + 24 (case ABA) + 24 (case ABB) + 24 (case BAA) + 24 (case BAB) + 24 (case BB)

= 126 seating arrangements

Thus, 126 distinct seating arrangements are possible.

=====

Brain Teaser No : 00322

```

      S L I D E
    -  D E A N
    - - - - -
      3 6 5 1

```

Each of seven digits from 0-9 are represented by a different letter above such that the subtraction is true. What word represents 3651?

Answer

3651 represents LENS.

Let's assign possible values to each letter and then use trial-n-error.

S must be 1.

Then D (under L) must be greater than 5. If D is 6, then L is 0. But then A must be 0 or 1 which is impossible. Hence, the possible values of D are 7, 8 or 9.

N must be E + 1. Also, D must be A + 5 as the possible values of D are 7, 8 or 9, D can not be (10+A) + 5.

Now using trial-n-error, we get S=1, I=2, L=3, A=4, N=5, E=6 and D=9

```

      S L I D E           1 3 2 9 6
    -  D E A N           - 9 6 4 5
    - - - - -           - - - - -
      3 6 5 1             L E N S

```

Hence, 3651 represents LENS.

=====

Brain Teaser No : 00361

Four men - Abraham, Bobby, Clinton and Denial - are standing in a straight line.

1. One man is fair, handsome and unscarred.
2. Two men who are not fair, are each standing next to Abraham.
3. Bobby is the only man standing next to exactly one handsome man.
4. Clinton is the only man not standing next to exactly one scarred man.

Who is fair, handsome and unscarred?

Answer

Clinton is fair, handsome and unscarred.

From (2), both the men standing next to Abraham are not fair. Also, exactly one man is fair, handsom and unscarred. Hence, there are two cases:

Case 1 :: ? (N, ?, ?) : Abraham (Y, Y, N) : ? (N, ?, ?) : ? (?, ?, ?)

Case 2 :: ? (N, ?, ?) : Abraham (?, ?, ?) : ? (N, ?, ?) : ? (Y, Y, N)

Note the representation - Name (Fair, Handsome, Scarred). "Y" stands for Yes and "N" stabds for No. Abraham (Y, Y, N) means Abraham is Fair, Handsome and Unscarred.

It is clear that either Abraham or the man at the extreme right is fair, handsome and unscarred.

From (4), it is deduced that Clinton is standing next to unscarred man and each of the other men standing next to exactly one scarred man.

Case 1 :: Clinton (N, ?, N) : Abraham (Y, Y, N) : ? (N, ?, Y) : ? (?, ?, Y)

Case 2 :: ? (N, ?, Y) : Abraham (?, ?, Y) : ? (N, ?, N) : Clinton (Y, Y, N)

From (3), Bobby is the only man standing next to exactly one handsome man. But in Case 1, Clinton is standing next to exactly one handsome man. Hence, Case 1 is not possible and Case 2 is the correct one.

Case 2 :: ? (N, ?, Y) : Abraham (?, ?, Y) : ? (N, ?, N) : Clinton (Y, Y, N)
Again from (3) and (4), there are 2 possibilities as shown below.

Case 2a :: Denial (N, N, Y) : Abraham (?, N, Y) : Bobby (N, N, N) : Clinton (Y, Y, N)

Case 2b :: Bobby (N, N, Y) : Abraham (?, Y, Y) : Denial (N, N, N) : Clinton (Y, Y, N)

Thus, Clinton is fair, handsome and unscarred. Also, Abraham may be either fair or not fair.

=====

Brain Teaser No : 00442

Adam, Burzin, Clark and Edmund each live in an apartment. Their apartments are arranged in a row numbered 1 to 4 from left to right. Also, one of them is the landlord.

1. If Clark's apartment is not next to Burzin's apartment, then the landlord is Adam and lives in apartment 1.

2. If Adam's apartment is right of Clark's apartment, then the landlord is Edmund and lives in apartment 4.

3. If Burzin's apartment is not next to Edmund's apartment, then the landlord is Clark and lives in apartment 3.

4. If Edmund's apartment is right of Adam's apartment, then the landlord is Burzin and lives in apartment 2.

Who is the landlord?

Answer

Clark is the landlord.

Assume each statement true, one at a time and see that no other statement is contradicted. Let's assume that Statement (1) is true. Then, Adam is the landlord and lives in apartment 1. Also, other three's apartments will be on the right of his apartment - which contradicts Statement (4) i.e. If Edmund's apartment is right of Adam's apartment, then the landlord is Burzin. Thus, Adam is not the landlord.

Let's assume that Statement (2) is true. Then, Edmund is the landlord and lives in apartment 4. Also, other three's apartments will be on the left of his apartment - which again contradicts Statement (4) i.e. If Edmund's apartment is right of Adam's apartment, then the landlord is Burzin. Thus, Edmund is not the landlord either.

Let's assume that Statement (3) is true. Then, Clark is the landlord and lives in apartment 3. It satisfies all the statements for

(1) Adam - (2) Edmund - (3) Clark - (4) Burzin

Hence, Clark is the landlord.

Similarly, you can assume Statement (4) true and find out that it also contradicts.

=====

Brain Teaser No : 00607

What are the next two numbers in the given series?

2, 11, 75, 700, 8476, ?, ?

Answer

The next two numbers in the series are 126125 and 2223277.

The pattern is -

2 = 2^1
11 = $2^1 + 3^2$
75 = $2^1 + 3^2 + 4^3$
700 = $2^1 + 3^2 + 4^3 + 5^4$
8476 = $2^1 + 3^2 + 4^3 + 5^4 + 6^5$
126125 = $2^1 + 3^2 + 4^3 + 5^4 + 6^5 + 7^6$
2223277 = $2^1 + 3^2 + 4^3 + 5^4 + 6^5 + 7^6 + 8^7$

$$45269998 = 2^1 + 3^2 + 4^3 + 5^4 + 6^5 + 7^6 + 8^7 + 9^8$$

=====

Brain Teaser No : 00046

What is the area of the triangle ABC with A(e,p) B(2e,3p) and C(3e,5p)?
where p = PI (3.141592654)

Answer

A tricky ONE.
Given 3 points are colinear. Hence, it is a straight line.
Hence area of triangle is 0.

=====

Brain Teaser No : 00090

The minute and the hour hand of a watch meet every 65 minutes.
How much does the watch lose or gain time and by how much?

Answer

The minute and the hour hand meet 11 times in 12 hours in normal watch i.e. they meet after every
= (12 * 60) / 11 minutes
= 65.45 minutes
= 65 minutes 27.16 seconds
But in our case they meet after every 65 minutes means the watch is gaining 27.16 seconds.

=====

Brain Teaser No : 00070

All of the students at a college are majoring in psychology, business, or both. 73% of the students are psychology majors, & 62% are business majors.
If there are 200 students, how many of them are majoring in both psychology & business?

Answer

70 students are majoring in both, psychology & business
If 73% of the students are psychology majors, we know that 27% are not psychology majors.
By the same reasoning, 38% are not business majors, because 62% of the students do major in business. So: 27 + 38 = 65
65% of the students are not majoring in both psychology & business, so 35% are double majors, a total of 70 students.

=====

Brain Teaser No : 00136

What are the next two numbers in the series?
34, 58, 56, 60, 42, 52, 65, ?, ?

Answer

The next two numbers are 49 and 42.
The pattern is : the totals of the letters in the words ONE, TWO, THREE, FOUR, FIVE, SIX, SEVEN, EIGHT and NINE when A=1, B=2, C=3, D=4 and so on.

First number = 15(O) + 14(N) + 5(E) = 34
Second Number = 20(T) + 23(W) + 15(O) = 58
Third Number = 20(T) + 8(H) + 18(R) + 5(E) + 5(E) = 56

Fourth Number = 6(F) + 15(O) + 21(U) + 18(R) = 60
Fifth Number = 6(F) + 9(I) + 22(V) + 5(E) = 42
Sixth Number = 19(S) + 9(I) + 24(X) = 52
Seventh Number = 19(S) + 5(E) + 22(V) + 5(E) + 14(N) = 65
Eight Number = 5(E) + 9(I) + 7(G) + 8(H) + 20(T) = 49
Ninth Number = 14(N) + 9(I) + 14(N) + 5(E) = 42

=====

Brain Teaser No : 00660

Gomzi has 3 timepieces in his house - a wall clock, an alarm clock and a wristwatch. The wristwatch is always accurate, whereas the wall clock gains 2 minutes everyday and the alarm clock loses 2 minutes everyday.

At exactly midnight last night, all three watches were showing the same time. If today is 25 July 2003, then on which date all three clocks will show the same time again?

Answer

All three clocks will show the same time again on midnight between 19 July 2004 and 20 July 2004.

A clock finishes on round in 12×60 i.e. 720 minutes.

If a clock gains 2 minutes everyday, then it would be 720 minutes ahead after 360 days.

Thus, after 360 days, it will show the same time again.

Similary, if a clock loses 2 minutes everyday, then it would be 720 minutes behind after 360 days. Thus, after 360 days, it will show the same time again.

Thus, after 360 days all three clocks will show the same time again i.e. midnight between 19 July 2004 and 20 July 2004.

=====

Brain Teaser No : 00106

A ship went on a voyage. After it had travelled 180 miles a plane started with 10 times the speed of the ship. Find the distance when they meet from starting point.

Answer

200 miles

Given that speed of the plane is 10 times the speed of the ship. So it is obvious that the distance covered by plane will be 10 times the distance covered by the ship for the given time.

i.e. Distance covered by plane = $10 \times$ (Distance covered by ship after plane started)

Now from the given data,

Distance covered by plane = 180 + Distance covered by ship after plane started

$10 \times$ (Distance covered by ship after plane started) = 180 + Distance covered by ship after plane started

$9 \times$ (Distance covered by ship after plane started) = 180

Distance covered by ship after plane started = 20 miles

Total distance covered by ship from starting point

= 180 + 20

= 200 miles

=====

Brain Teaser No : 00265

There are 4 blocks each with 6 sides. Each side has a letter from the alphabet. No letters are ever repeated. By arranging the blocks in different ways they spell all the words listed below:

BODY, MAZE, CURT, MOVE, DRAW, NOTE, FEAR, PICK, HUNT, QUIT, JOKE, SNOB, KNEW, TYPE, LIFE

Can you figure out how the letters are arranged on the 4 blocks?

Submitted by : Diana Kim

Answer

(C, D, E, H, Q, S), (A, B, K, L, T, V), (F, O, P, U, W, Z), (I, J, M, N, R, Y)
Out of the 26 letters in the alphabet, G and X are not used.

There are 7 words with letter 'E' - MAZE, MOVE, NOTE, FEAR, JOKE, KNEW, TYPE, LIFE. It means that none of the letters in these 7 words can be on the same block as the letter 'E'. Hence, the other 5 letters must be from B, C, D, H, Q, S, U.

As BODY is one of the possible word, B and D can not be on the same block. Similarly, C and U also can not be on the same block as CURT is one of the possible word. Hence, E, H, Q, S are on the same block.

Also, S and B can not be on the same block (SNOB). Q and U can not be on the same block (QUIT). Hence, first Block contains C, D, E, H, Q, S

Now, write down 4 rows each with A to Z, except G and X. Take each word one by one, remove not possible letters and circle the possible letters.

The letters on four blocks are:

Block 1 : C, D, E, H, Q, S

Block 2 : A, B, K, L, T, V

Block 3 : F, O, P, U, W, Z

Block 4 : I, J, M, N, R, Y

=====

Brain Teaser No : 00293

A positive integer that, when added to 1000 gives a sum which is greater than when multiplied by 1000.
Find the positive integer.

Answer

The positive integer is 1.

Sum of 1 and 1000 = $1 + 1000 = 1001$

Multiplication of 1 and 1000 = $1 * 1000 = 1000$

Thus, sum of 1 and 1000 is greater than the multiplication of 1 and 1000.

=====

Brain Teaser No : 00339

What numbers do X and Y represent in the following series:

2, 6, 12, 20, 30, 42, X, Y

Submitted by : Milind Gadagkar

Answer

X=56 and Y=72

The pattern is the multiplication of two consecutive numbers starting with 1.

First number = $1 * 2 = 2$

Second number = $2 * 3 = 6$

Third number = $3 * 4 = 12$

Fourth number = $4 * 5 = 20$

Fifth number = $5 * 6 = 30$

Sixth number = $6 * 7 = 42$

Seventh number = $7 * 8 = 56$

Eighth number = $8 * 9 = 72$

Alternatively, the pattern can be defined as adding a constant after incrementing it by 2 to the previous number.

First number = 2
 Second number = 2 + 4 = 6
 Third number = 6 + 6 = 12
 Forth number = 12 + 8 = 20
 Fifth number = 20 + 10 = 30
 Sixth number = 30 + 12 = 42
 Seventh number = 42 + 14 = 56
 Eighth number = 56 + 16 = 72

=====

Brain Teaser No : 00511

Substitute digits for the letters to make the following addition problem true.

```

      O N E
    N I N E
  T W E N T Y
+   F I F T Y
-----
  E I G H T Y
  
```

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter Y, no other letter can be 3 and all other Y in the puzzle must be 3.

Answer

G=0, H=1, Y=2, T=3, E=4, I=5, W=6, F=7, N=8, O=9

It is obvious that $E = T + 1$

Also, $2E + 2Y = Y$ i.e. $2E + Y$ must be either 10 or 20 and Y must be an even number. Thus, possible values of (E, Y) pair are (4, 2) (9, 2) (3, 4) (8, 4) (2, 6) (7, 6) (1, 8) (6, 8) Now, taking each pair individually, only one pair makes the addition true.

```

      O N E           9 8 4
    N I N E           8 5 8 4
  T W E N T Y       3 6 4 8 3 2
+   F I F T Y       + 7 5 7 3 2
-----
  E I G H T Y       4 5 0 1 3 2
  
```

=====

Brain Teaser No : 00008

3 blocks are chosen randomly on a chessboard. What is the probability that they are in the same diagonal?

Answer

There are total of 64 blocks on a chessboard. So 3 blocks can be chosen out of 64 in $64C3$ ways.

So the sample space is = 41664

There are 2 diagonal on chessboard each one having 8 blocks. Consider one of them.

3 blocks out of 8 blocks in diagonal can be chosen in $8C3$ ways.

But there are 2 such diagonals, hence favourable = $2 * 8C3 = 2 * 56 = 112$

The require probability is

= $112 / 41664$

= $1 / 372$

= 0.002688

=====

Brain Teaser No : 00022

There were N stations on a railroad. After adding X stations 46 additional tickets have to be printed.

Find N and X.

Answer

Let before adding X stations, total number of tickets

$$t = N(N-1)$$

After adding X stations total number of tickets are

$$t + 46 = (N+X)(N+X-1)$$

Subtracting 1st from 2nd

$$46 = (N+X)(N+X-1) - N(N-1)$$

$$46 = N^2 + NX - N + NX + X^2 - X - N^2 + N$$

$$46 = 2NX + X^2 - X$$

$$46 = (2N - 1)X + X^2$$

$$X^2 + (2N - 1)X - 46 = 0$$

Now there are only two possible factors of 46. They are (46,1) and (23,2)

Case I: (46,1)

$$2N - 1 = 45$$

$$2N = 46$$

$$N = 23$$

$$\text{And } X = 1$$

Case II: (23,2)

$$2N - 1 = 21$$

$$2N = 22$$

$$N = 11$$

$$\text{And } X = 2$$

Hence, there are 2 possible answers.

=====

Brain Teaser No : 00092

Below is a Quiz written by Einstein in the 1st century.

He said 98% of the people in the world cannot solve the quiz. Are you among the other 2%?

FACTS

1. There are 5 houses in 5 different colors.
2. In each house lives a person with a different nationality.
3. These 5 owners drink a certain beverage, smoke a certain brand of cigar and keep a certain pet.
4. No owners have the same pet, smoke the same brand of cigar or drink the same drink.

HINTS

1. The Brit lives in a red house.
2. The Swede keeps dogs as pets.
3. The Dane drinks tea.
4. The green house is on the immediate left of the white house.
5. The green house owner drinks coffee.
6. The person who smokes Pall Mall rears birds.
7. The owner of the yellow house smokes Dunhill.
8. The man living in the house right in the center drinks milk.
9. The Norwegian lives in the first house.
10. The man who smokes blend lives next to the one who keeps cats.
11. The man who keeps horses lives next to the man who smokes Dunhill.
12. The owner who smokes Blue Master drinks beer.
13. The German smokes Prince.
14. The Norwegian lives next to the Blue House.
15. The man who smokes blend has a neighbor who drinks water.

THE QUESTION IS....WHO KEEPS FISH?

There is no trick to this - it needs deductive reasoning and definitely a pen and paper.

Answer

Nationality	Beverage	Cigar	Pet	House Color
Norwegian	Water	Dunhill	Cat	Yellow
Dane	Tea	Blend	Horses	Blue
Brit	Milk	Pall Mall	Bird	Red
German	Coffee	Prince	Fish	Green
Swede	Beer	Blue Master	Dog	White

Therefore the answer is the German.

I wonder if U could work it out by realizing that Einstien was a german and kept fish but that would probably be cheating :)

There is one more possible answer, if we remove "immediate" from the Hint 4 i.e. read it as "The green house is on the left of the white house, not necessarily on the immediate left"

Nationality	Beverage	Cigar	Pet	House Color
Norwegian	Coffee	Blend	Fish	Green
German	Water	Prince	Cats	Blue
Swede	Milk	Dunhill	Dogs	Yellow
Brit	Beer	Blue Master	Horses	Red
Dane	Tea	Pall Mall	Birds	White

Thus, either German or Norwegian keeps the Fish, if the green house is not necessarily on the immediate left of the white house.

Thanks to Katie Crowe and friends for the second answer !!!

=====

Brain Teaser No : 00203

Do you know the missing number in the given series?
10, 11, 12, 13, 14, 15, 16, 17, 20, 22, 24, ____, 100, 121, 10000

Answer

The missing number is 31.
The pattern is - Sixteen in the base n for n = 16, 15, ..., 2.

- 16 in the base 16 = 10
 - 16 in the base 15 = 11
 - 16 in the base 14 = 12
 - 16 in the base 13 = 13
 - 16 in the base 12 = 14
 - 16 in the base 11 = 15
 - 16 in the base 10 = 16
 - 16 in the base 9 = 17
 - 16 in the base 8 = 20
 - 16 in the base 7 = 22
 - 16 in the base 6 = 24
 - 16 in the base 5 = 31
 - 16 in the base 4 = 100
 - 16 in the base 3 = 121
 - 16 in the base 2 = 10000
- Thus, the complete series is - 10, 11, 12, 13, 14, 15, 16, 17, 20, 22, 24, 31, 100, 121, 10000

=====

Brain Teaser No : 00014

Five horses ran in the race.

- * There were no ties.
- * Sikandar did not come first.
- * Star was neither first nor last.
- * Mughal Glory came in one place after Sikandar.
- * Zozo was not second.
- * Rangila was two place below Zozo.

In what order did the horses finish?

Answer

It's simple.

Let's find the possible places horses can finish. Possibilities are:

Sikandar - 2,3,4 (not 5th as Mughal Glory came one place after him)

Star - 2,3,4

Mughal Glory - 3,4,5

Zozo - 1,3 (not 4th & 5th as Rangila is two place after him)

Rangila - 3,5

So the result is:

1 Zozo

2 Star

3 Rangila

4 Sikandar

5 Mughal Glory

=====

Brain Teaser No : 00169

Pinto says, "The horse is not Black."

Sandy says, "The horse is either Brown or Grey."

Andy says, "The horse is Brown."

At least one is telling truth and at least one is lying.

Can you tell the color of the horse?

Answer

The color of the horse can be any color other than Black and Brown.

If the color of the horse is Black - all are lying.

If the color of the horse is Brown - all are telling truth.

Thus, the horse is neither Black nor Brown.

If the color of the horse is Grey - Pinto and Sandy are telling truth whereas Andy is lying.

If the color of the horse is other than Black, Brown and Grey - Pinto is telling truth whereas Sandy and Andy are lying.

You must have noticed that for the given conditions, Pinto is always telling truth whereas Andy is always lying.

=====

Brain Teaser No : 00195

A camp-fire was attended by 49 friends. After shaking hands, each of them sat on the round table and clinked their mug with the friends to his immediate left and immediate right.

How many times did the mugs clink?

Answer

49 times

Let's assume that everyone clinked their mug with friend to his left only. It means that there are total 49 clinks. Now the right clink of each person is left clink of the person on right which is already happened. Hence, there are only 49 clinks.

=====

Brain Teaser No : 00372

In the first One-day International Cricket match between India and England at Lords, the bowling honours in the Indian team was shared by Kapil Dev, Madanlal and Binni.

1. Either Kapil took half the wickets or one of the players was run out.
2. Either Kapil took 5 wickets and Binni took 3 or Madanlal took one more than Binni.
3. The sum of Kapil's victims and twice of Madanlal's victims is one more than three times Binni's victims.

Can you tell the number of wickets each of them took?

Answer

Statement (3) can be represented as $K + 2M = 3B + 1$
where,

K - wickets taken by Kapil Dev

M - wickets taken by Madanlal

B - wickets taken by Binni

Let's consider statement (2). If Kapil took 5 wickets and Binni took 3 wickets, then from equation above, Madanlal should have taken two-and-a-half wickets which is impossible. Hence, Madanlal took one more than Binni i.e. $M = B + 1$

Substitute $M = B + 1$ in first equation,

$$K + 2M = 3B + 1$$

$$K + 2(B + 1) = 3B + 1$$

$$K + 2B + 2 = 3B + 1$$

$$K = B - 1$$

Now consider statement (1). If Kapil took half the wickets i.e. 5 wickets, Binni should have taken 6 wickets and Madanlal should have taken 7 wickets. But this is impossible as there are just 10 wickets. Hence, one player was run out and total wickets taken by them must be 9.

$$K + M + B = 9$$

$$(B - 1) + (B + 1) + B = 9$$

$$B = 3 \text{ wickets.}$$

Hence, wickets taken by Kapil, Madanlal and Binni are 2, 4 and 3 respectively.

There are 2 more possible answers as total number of wickets fallen is not specified. In the above answer, we assumed maximum wickets i.e. 10.

* 10 wickets : Kapil=2, Madanlal=4, Binni=3, Runout=1

* 7 wickets : Kapil=1, Madanlal=3, Binni=2, Runout=1

* 4 wickets : Kapil=0, Madanlal=2, Binni=1, Runout=1

=====

Brain Teaser No : 00428

Mr. X wants to send Diamond Necklace to his fiancée Y who lives in some other country. Mr. X puts the Diamond Necklace inside a box to parcel. Note that:

1. The parcel must be locked.
2. The box is made up of such a material that nobody can break it.
3. The box has a handle large enough to put a lock on it.
4. Mr. X can not send a key with the parcel.
5. Combination locks and telephones are not available.

How will Mr. X send Diamond Necklace to his fiancée Y?

Answer

Mr. X and his fiancée Y will follow the following steps.

1. Mr. X will put Diamond Necklace inside a box and will lock it.

2. He will send the parcel to his fiancée Y, without the key.
3. Y will put her lock on it and will send box back to Mr. X.
4. Mr. X will remove his lock and will send the box back to Y.
5. Y will remove her lock and will receive the Necklace.

=====

Brain Teaser No : 00475

My house has a number.

1. If my house number is a multiple of 3, then it is a number from 50 through 59.
2. If my house number is not a multiple of 4, then it is a number from 60 through 69.
3. If my house number is not a multiple of 6, then it is a number from 70 through 79.

What is my house number?

Answer

The house number is 76.

From (1) and (3), the house number must be from 50 to 59 or 70 to 79. Take any number. It will be either multiple of 3 or not. Also, a number multiple of 6 is always a multiple of 3. Hence, the house number can be 51, 54, 57, 70, 71, 73, 74, 76, 77 or 79.

From (2), if the house number is not a multiple of 4, then it is a number from 60 through 69. There is not a single number between 60 and 69 in short-listed numbers above. Hence, the house number must be a multiple of 4 i.e. 76

Hence, the house number is 76.

=====

Brain Teaser No : 00839

The secret agent X emailed some code to his head office. They are "RADAR, LEVEL, ROTOR, REDIVIDER, MOTOR". But four of these five words have something in common and one is fake. Can you tell which one is fake? Ignore the fact that four of the code-words are of the same length.

Answer

The fake code-word is MOTOR.

All the code-words except MOTOR are Palindromes.

=====

Brain Teaser No : 00111

In a certain year, the number of girls who graduated from City High School was twice the number of boys. If $\frac{3}{4}$ of the girls and $\frac{5}{6}$ of the boys went to college immediately after graduation, what fraction of the graduates that year went to college immediately after graduation?

Answer

Assume that number of boys graduated from City High School = B

Therefore, number of girls graduated from City High School = $2*B$

It is given that $\frac{3}{4}$ of the girls and $\frac{5}{6}$ of the boys went to college immediately after graduation.

Hence, total students went to college

$$= \left(\frac{3}{4}\right)(2*B) + \left(\frac{5}{6}\right)(B)$$

$$= B * \left(\frac{3}{2} + \frac{5}{6}\right)$$

$$= \left(\frac{7}{3}\right)B$$

Fraction of the graduates that year went to college immediately after graduation

$$= \left[\left(\frac{7}{3}\right)B\right] / [3*B]$$

$$= \frac{7}{9}$$

Therefore, the answer is $\frac{7}{9}$

=====

Brain Teaser No : 00143

Substitute numbers for the letters so that the following mathematical expressions are correct.

ABC	DEF	GHI
--- = IE	--- = IE	--- = IE
3	6	9

Note that the same number must be used for the same letter whenever it appears.

Answer

A=2, B=1, C=9, D=4, E=3, F=8, G=6, H=5, I=7

Let's start with GHI = 9 * IE. Note that I appears on both the side. Also, after multiplying IE by 9 the answer should have I at the unit's place. The possible values of IE are 19, 28, 37, 46, 55, 64, 73, 82 and 91; out of which only 64, 73 and 82 satisfies the condition. (as all alphabet should represent different digits)

Now, consider DEF = 6 * IE. Out of three short-listed values, only 73 satisfies the equation. Also, ABC = 3 * IE is satisfied by 73.

Hence, A=2, B=1, C=9, D=4, E=3, F=8, G=6, H=5, I=7

219	438	657
--- = 73	--- = 73	--- = 73
3	6	9

=====

Brain Teaser No : 00351

If 6 x 4 = 12
8 x 6 = 32
11 x 8 = 66
then 10 x 10 = ??

Submitted by : Nick Chimenti

Answer

80

The pattern is multiply the first number by second after reducing second number by 2. One can view is as follow:

6 x (4 - 2) = 12
8 x (6 - 2) = 32
11 x (8 - 2) = 66
10 x (10 - 2) = 80

=====

Brain Teaser No : 00446

What are the next 2 numbers in the pattern?
2, 7, -1, 10, -4, 13, _, _

Submitted by : Rob Van Dam

Answer

The next two number are -7 and 16

The pattern is : To get odd position number, subtract 3 from the previous odd position number. Similarly, to get even position number, add 3 to the previous even position number.

The odd position numbers are : 2, -1, -4
The next odd position numbers are : -7, -10, -13 and so on.

The even position numbers are : 7, 10, 13
The next even position numbers are : 16, 19, 22 and so on.

Hence the series is 2, 7, -1, 10, -4, 13, -7, 16, -10, 19

=====

Brain Teaser No : 00821

Pooja and Esha met each other after long time. In the course of their conversation, Pooja asked Esha her age. Esha replied, "If you reverse my age, you will get my husband's age. He is of course older than me. Also, the difference between our age is 1/11th of the sum of our age."

Can you help out Pooja in finding Esha's age?

Answer

Esha's age is 45 years.

Assume that Esha's age is $10X+Y$ years. Hence, her husband's age is $(10Y + X)$ years.

It is given that difference between their age is 1/11th of the sum of their age. Hence,

$$[(10Y + X) - (10X + Y)] = (1/11)[(10Y + X) + (10X + Y)]$$

$$(9Y - 9X) = (1/11)(11X + 11Y)$$

$$9Y - 9X = X + Y$$

$$8Y = 10X$$

$$4Y = 5X$$

Hence, the possible values are $X=4$, $Y=5$ and Esha's age is 45 years.

=====

Brain Teaser No : 00857

An anthropologist discovers an isolated tribe whose written alphabet contains only six letters (call the letters A, B, C, D, E and F). The tribe has a taboo against using the same letter twice in the same word. It's never done.

If each different sequence of letters constitutes a different word in the language, what is the maximum number of six-letter words that the language can employ?

Submitted by : Shelley

Answer

The language can employ maximum of 720 six-letter words.

It is a simple permutation problem of arranging 6 letters to get different six-letter words. And it can be done in $6!$ ways i.e. 720 ways.

In other words, the first letter can be any of the given 6 letters (A through F). Then, whatever the first letter is, the second letter will always be from the remaining 5 letters (as same letter can not be used twice), and the third letter always be from the remaining 4 letters, and so on. Thus, the different possible six-letter words are $6*5*4*3*2*1 = 720$

=====

Brain Teaser No : 00048

1/3 rd of the contents of a container evaporated on the 1st day. 3/4th of the remaining contents of the container evaporated on the second day.

What part of the contents of the container is left at the end of the second day?

Answer

Assume that contents of the container is X

On the first day $\frac{1}{3}$ rd is evaporated.
($1 - \frac{1}{3}$) of X is remaining i.e. $(\frac{2}{3})X$
On the Second day $\frac{3}{4}$ th is evaporated. Hence,
($1 - \frac{3}{4}$) of $(\frac{2}{3})X$ is remaining
i.e. $(\frac{1}{4})(\frac{2}{3})X = (\frac{1}{6}) X$
Hence $\frac{1}{6}$ th of the contents of the container is remaining

=====

Brain Teaser No : 00184

Of the 120 people in the room, $\frac{3}{5}$ are women. If $\frac{2}{3}$ of the people are married, what is the maximum number of women in the room who could be unmarried?

Answer

Maximum 40 women are unmarried.
In the room , there are $(\frac{3}{5}) * 120 = 72$ Women and hence, 48 Men.
Also, married people are $(\frac{2}{3}) * 120 = 80$ which means that 40 people are unmarried.
Even assuming all of the men are married, this still leaves $80 - 48 = 32$ others who are married, and those other are women. So atleast 32 women must be married, which means that maximum possible number of women who are unmaried is $72 - 32 = 40$

=====

Brain Teaser No : 00006

You are working in a store that stocks bangles. Three boxes of bangles have been incorrectly labeled. The labels say Red Bangles, Green Bangles and Red & Green Bangles. How can you re-label the boxes correctly, by taking only one bangle from one box?

Answer

Keep in mind that boxes are incorrectly labeled.
Take out one bangle from the box labeled "Red & Green Bangles". There are 2 possibilities:

If that bangle is Red, it means that box contains Red Bangles. The box labeled as "Green Bangles" contains Red & Green Bangles. And box labeled "Red Bangles" contains Green bangles.

RED GREEN BOX --- Red Bangles
RED BOX --- Green Bangles
GREEN BOX --- Red & Green Bangles

If that bangle is Green, it means that box contains Green Bangles. The box labeled as "Green Bangles" contains Red Bangles. And box labeled "Red Bangles" contains Red & Green Bangles.

RED GREEN BOX --- Green Bangles
RED BOX --- Red & Green Bangles
GREEN BOX --- Red Bangles

=====

Brain Teaser No : 00121

Jack and Jill are playing cards for a stake of \$1 a game. At the end of the evening, Jack has won 3 games and Jill has won \$3. How many games did they play?
Submitted by : Nathalie Drouin

Answer

They played total of 9 games. Jack won 3 games and Jill won 6 games.

If Jack has won three games and Jill has won \$3, she lost a dollar for each loss, therefore she has won 6 and lost 3 to make \$3 and he won the other 3 that she lost!

=====

Brain Teaser No : 00820

Amit, Bhavin, Himanshu and Rakesh are sitting around a table.

- * The Electronics Engineer is sitting to the left of the Mechanical Engineer.
- * Amit is sitting opposite to Computer Engineer.
- * Himanshu likes to play Computer Games.
- * Bhavin is sitting to the right of the Chemical Engineer.

Can you figure out everyone's profession?

Answer

Amit is the Mechanical Engineer. Bhavin is the Computer Engineer. Himanshu and Rakesh are either Chemical Engineer or Electronics Engineer. Amit and Bhavin are sitting opposite to each other. Whereas Chemical Engineer and Electronics Engineer are sitting opposite to each other. We cannot find out who is Chemical Engineer and Electronics Engineer as data provided is not sufficient.

=====

Brain Teaser No : 00358

What are next two numbers in the given series?

2, 12, 360, 75600, ?, ?

Answer

The next two numbers are 174636000 and 5244319080000.

The pattern is as follow:

- 2 = 2^1
- 12 = $2^2 * 3^1$
- 360 = $2^3 * 3^2 * 5^1$
- 75600 = $2^4 * 3^3 * 5^2 * 7^1$
- 174636000 = $2^5 * 3^4 * 5^3 * 7^2 * 11^1$
- 5244319080000 = $2^6 * 3^5 * 5^4 * 7^3 * 11^2 * 13^1$

A tough one !!!

=====

Brain Teaser No : 00457

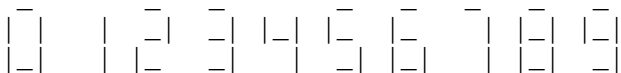
A series comprising of numbers contains only ten digits. The first eight digits in the given series are 6, 2, 5, 5, 4, 5, 6, 3

Can you find out the remaining two digits?

Answer

The remaining two digits are 7 and 6.

The pattern is - the number of segments on a standard calculator/LCD display it takes to represent the digits starting with 0.



=====

Brain Teaser No : 00500

What is the next number in the given series?

0, 01, 01011, 0101101011011, ?

Answer

0101101011011010110101101011011

The pattern is - each number is formed from the previous number by substituting '01' for '0' and '011' for '1' simultaneously at each occurrence.

=====

Brain Teaser No : 00515

John lives in "Friends Society" where all the houses are in a row and are numbered sequentially starting from 1. His house number is 109. Jessy lives in the same society. All the house numbers on the left side of Jessy's house add up exactly the same as all the house numbers on the right side of her house. What is the number of Jessy's house? Find the minimal possible answer.

Answer

There are 288 houses and Jessy's house number is 204.

Let's assume that in the "Friends Society" there are total N houses numbered from 1 to N and Jessy's house number is X.

Now it is given that all the house numbers on the left side of Jessy's house add up exactly the same as all the house numbers on the right side of her house. Hence,

$$1 + 2 + 3 + \dots + (X-1) = (X+1) + (X+2) + (X+3) + \dots + N$$

Both the sides of the above equations are in A.P. Hence, using A.P. summation formula,

$$[(X-1)/2][2*(1) + (X-1-1)] = [(N-X)/2][2*(X+1) + (N-X-1)]$$

$$[X-1][(2) + (X-2)] = [N-X][(2X+2) + (N-X-1)]$$

$$(X-1)(X) = (N-X)(N+X+1)$$

$$X^2 - X = N^2 + NX + N - NX - X^2 - X$$

$$X^2 = N^2 + N - X^2$$

$$2X^2 = N^2 + N$$

$$X^2 = (N^2 + N)/2$$

$$X^2 = N(N+1)/2$$

Now, using Trial and Error method to find values of N and X such that above equation is satisfied, we get

1. N = 8, X = 6
2. N = 49, X = 35
3. N = 288, X = 204
4. N = 1681, X = 1189
5. N = 9800, X = 6930

But we require minimal possible answer and it is given that John's house number is 109. It means that there are atleast 109 houses. Hence, first two are not possible. And the answer is : there are 288 houses and Jessy's house number is 204.

=====

Brain Teaser No : 00005

A man went into a fast food restaurant and ate a meal costing Rs. 105, giving the accountant a Rs. 500 note. He kept the change, came back a few minutes later and had some food packed for his girl friend. He gave the accountant a Rs. 100 note and received Rs. 20 in change. Later the bank told the accountant that both the Rs. 500 and the Rs. 100 notes were counterfeit.

How much money did the restaurant lose? Ignore the profit of the food restaurant.

Answer

He lost Rs.600

First time restaurant has given food worth Rs.105 and Rs. 395 change. Similarly second time, food worth Rs.80 and Rs.20 change. Here, we are not considering food restaurant profits.

=====

Brain Teaser No : 00043

Professors Ahmad and Joshi are extremely strange persons.
Prof. Ahmad lies on Mondays, Tuesdays and Wednesdays, but tells true on other days of the week.
Prof. Joshi lies on Thursdays, Fridays and Saturdays, but tells true on other days of the week.

* They made the following statements:
Prof. Ahmad : "Yesterday was one of my lying days."
Prof. Joshi : "Yesterday was one of my lying days too."
What day of the week was it?

* Both Professors looked very alike and one day they said to a visitor to their department :
First Prof: "I'm Ahmed."
Second Prof: "I'm Joshi."
Who was who? What day of the week was it?

* On another occasion, both Professors made the following statements:
First Prof : 1. "I lie on Saturdays."
2. "I lie on Sundays."
Second Prof. : "I will lie tomorrow."
What day of the week was it?

Answer

Mon Tue Wed Thu Fri Sat Sun
Prof. Ahmad Lies Lies Lies tells truth tells truth tells truth tells truth
Prof. Joshi tells truth tells truth tells truth Lies Lies Lies tells truth

Teaser 1 :
Assume that Prof. Ahmad is telling truth => today is Thursday
Assume that Prof. Ahmad is lying => today is Monday
Similarly, Assume Prof. Joshi is telling truth => today is Sunday
Assume that Prof. Joshi is lying => today is Thursday.
Hence, today is Thursday, Prof. Ahmad is telling truth and Prof. Joshi is lying.

Teaser 2 :
Assume that First Prof. is telling truth => Thursday, Friday, Saturday or Sunday
Assume that First Prof. is lying => Thursday, Friday or Saturday
Similarly, Assume Second Prof. is telling truth => Monday, Tuesday, Wednesday or Sunday
Assume that Second Prof. is lying => Monday, Tuesday, Wednesday
The only possibility is Sunday and both are telling truth.

Teaser 3 :
A simple one. First Prof. says - "I lie on Sunday" which is false as both the Prof. tell truth on Sunday. It means the first statement made by the First Prof. is also false. It means the First Prof. tells truth on Saturday. Hence First Prof. is Prof. Ahmad and he is lying. It means that today is either Monday, Tuesday or Wednesday.

It is clear that Second Prof. is Prof. Joshi.
Assume that he is telling truth => today is Wednesday
Assume that he is lying => today is Saturday.
Hence, today is Wednesday !!!

=====

Brain Teaser No : 00088

Find the values of each of the alphabets.
N O O N

```

  S O O N
+ M O O N
-----
  J U N E

```

Answer

Using trial and error. There are 2 solutions to it and may be more.

```

  2 4 4 2
  1 4 4 2
+ 5 4 4 2
-----
  9 3 2 6

```

```

  4 1 1 4
  5 1 1 4
+ 0 1 1 4
-----
  9 3 4 2

```

=====

Brain Teaser No : 00252

A man received a cheque. The rupees has been transposed for paise and vice versa. After spending 5 rupees 42 paise, he discovered that he now had exactly six times the value of the correct cheque amount.
What amount should he have received?

Answer

He received 6 rupees and 44 paise.
Let's assume that he received a cheque of X rupees and Y paise i.e. (100X + Y)
The amount received by him = 100Y + X
After spending 5 rupees 42 paise, the remaining amount is (100Y + X - 542) which is 6 times the original amount. Thus,
(100Y + X - 542) = 6*(100X + Y)
100Y + X - 542 = 600X + 6Y
94Y = 599X + 542
Using trial-n-error, we get X=6 and Y=44
Hence, he should have received 6 rupees and 44 paise.

=====

Brain Teaser No : 00024

A person wanted to withdraw X rupees and Y paise from the bank. But cashier made a mistake and gave him Y rupees and X paise. Neither the person nor the cashier noticed that. After spending 20 paise, the person counts the money. And to his surprise, he has double the amount he wanted to withdraw.
Find X and Y. (1 Rupee = 100 Paise)

Answer

As given, the person wanted to withdraw 100X + Y paise.
But he got 100Y + X paise.
After spending 20 paise, he has double the amount he wanted to withdraw. Hence, the equation is
2 * (100X + Y) = 100Y + X - 20
200X + 2Y = 100Y + X - 20
199X - 98Y = -20
98Y - 199X = 20

Now, we got one equation; but there are 2 variables. We have to apply little bit of logic over here. We know that if we interchange X & Y, amount gets double. So Y should be twice of X or one more than twice of X i.e. $Y = 2X$ or $Y = 2X+1$

Case I : $Y=2X$

Solving two equations simultaneously

$$98Y - 199X = 20$$

$$Y - 2X = 0$$

We get $X = -20/3$ & $Y = -40/2$

Case II : $Y=2X+1$

Solving two equations simultaneously

$$98Y - 199X = 20$$

$$Y - 2X = 1$$

We get $X = 26$ & $Y = 53$

Now, its obvious that he wanted to withdraw Rs. 26.53

=====

Brain Teaser No : 00158

Consider the sum: $ABC + DEF + GHI = JJJ$

If different letters represent different digits, and there are no leading zeros, what does J represent?

Answer

The value of J must be 9.

Since there are no leading zeros, J must be 7, 8, or 9. ($JJJ = ABC + DEF + GHI = 14? + 25? + 36? = 7??$)

Now, the remainder left after dividing any number by 9 is the same as the remainder left after dividing the sum of the digits of that number by 9. Also, note that $0 + 1 + \dots + 9$ has a remainder of 0 after dividing by 9 and JJJ has a remainder of 0, 3, or 6.

The number 9 is the only number from 7, 8 and 9 that leaves a remainder of 0, 3, or 6 if you remove it from the sum $0 + 1 + \dots + 9$. Hence, it follows that J must be 9.

=====

Brain Teaser No : 00323

Find next two numbers in the series :

100, 365, 24, 60, ?, ?

Answer

The next two numbers are 60 and 1000.

The pattern is breaking down the time from Century to milliseconds.

There are 100 years in a century.

There are 365 days in a year.

There are 24 hours in a day.

There are 60 minutes in an hour.

There are 60 seconds in a minute.

There are 1000 milliseconds in a second.

Hence, the sequence is : 100, 365, 24, 60, 60, 1000

=====

Brain Teaser No : 00031

Find sum of digits of D.

Let

$A = 19991999$

B = sum of digits of A
C = sum of digits of B
D = sum of digits of C
(HINT : $A = B = C = D \pmod{9}$)

Answer

The sum of the digits of D is 1.
Let E = sum of digits of D.
It follows from the hint that $A = E \pmod{9}$
Consider,

A = 19991999
 < 20002000
 = 22000 * 10002000
 = 1024200 * 106000
 < 10800 * 106000
 = 106800
i.e. $A < 106800$
i.e. $B < 6800 * 9 = 61200$
i.e. $C < 5 * 9 = 45$
i.e. $D < 2 * 9 = 18$
i.e. $E \leq 9$
i.e. E is a single digit number.
Also,
1999 = 1 (mod 9)
so 19991999 = 1 (mod 9)

Therefore we conclude that $E=1$.

=====

Brain Teaser No : 00406

What is the four-digit number in which the first digit is 1/3 of the second, the third is the sum of the first and second, and the last is three times the second?
Submitted by : Dan Allen

Answer

The 4 digit number is 1349.
It is given that the first digit is 1/3 of the second. There are 3 such possibilities.
1. 1 and 3
2. 2 and 6
3. 3 and 9
Now, the third digit is the sum of the first and second digits.

1. $1 + 3 = 4$
2. $2 + 6 = 8$
3. $3 + 9 = 12$
It is clear that option 3 is not possible. So we are left with only two options. Also, the last digit is three times the second, which rules out the second option. Hence, the answer is 1349.

=====

Brain Teaser No : 00455

Find the remainder of $(2^n)/n$
Submitted by : Rupa Reddy

Answer

There is no regular pattern as such, the remainder just depends on the value of n.
* If n is the power of 2 (i.e 1, 2, 4, 8, ...), the remainder is 0.

* If n is the prime number and not the power of 2 (i.e. 3, 5, 7, 11, 13, ...), the remainder is 2.
For remaining cases like, even numbers other than the power of 2 and odd numbers other than the prime numbers, there is no regular pattern. If you get such pattern, do let all know !!!

=====

Brain Teaser No : 00049

The average scores of the class for exam are as follow:
Average score of the boys = 90
Average score of the girls = 81
Average score of the class = 84
Find whether Class contains more Boys or Girls?

Answer

Assume that there are B boys and G girls in the Class.

Hence from the given data :

$$90*B + 81*G = 84*(B+G)$$

$$90B + 81G = 84B + 84G$$

$$6B = 3G$$

$$2B = G$$

Hence number of Girls in the Class are twice the number of Boys.

=====

Brain Teaser No : 00078

PRIMAL SERIES

Decide what the next 5 figures in this series should be:

0110101000101000101000

Answer

10000

The title holds a hint, although this is still a tough puzzle. The series begins with the number 1, & continues through 22, giving a 1 for each prime number, & a 0 for each number that is not prime.

Of the last 5 numbers (23-27), only 23 is prime.

=====

Brain Teaser No : 00605

"We - Amar, Akbar and Anthony - each have some children.

1. Amar has at least one girl and twice as many boys as girls.
 2. Akbar has at least one girl and three times as many boys as girls.
 3. Anthony has at least one girl and three more boys than girls.
 4. When I tell you the number of children we have altogether - a number less than 25 - you will know how many children I have, but not how many children each of others has."
- Who is the speaker and how many children he have?

Answer

Amar is the speaker and he have 6 children.

Find out possible number of children each can have and then use trial-n-error.

From (1), Amar has at least 3 children and any number from -
3, 6, 9, 12, 15, 18,

From (2), Akbar has at least 4 children and any number from -
4, 8, 12, 16, 20, 24,

From (3), Anthony has at least 5 children and any number from -
5, 7, 9, 11, 13, 15, 17, 19, 21,

From (4), total number of children are at most 24. Also, if total number of children is odd, Amar must have an even number of children and if total number of children is even, Amar must have an odd number of children.

Using some trial-n-error:

* The total number of children can not be 13 as no three numbers - one from each sequence - can add up to 13.

* The total number of children can not be 12, 14, 15, 16 or 17 as there is just a one way to get that sum by adding up one number from each sequence. Hence, we will know how many children they individually have. Thus, contradicts the statement (4).

* The total number of children can not be 18, 20, 21, 22, 23 or 24 as there are multiple ways to get that sum. Hence, we won't know how many children, at least one of them have. Again contradicting the statement (4).

Thus, the total number of children must be 19 and there are two possible cases:

1> Amar-6, Akbar-4, Anthony-9

2> Amar-6, Akbar-8, Anthony-5

In both the cases, we know that Amar have 6 children and hence Amar is the speaker.

=====

Brain Teaser No : 00089

There are 20 poles with a constant distance between each pole. A car takes 24 second to reach the 12th pole.

How much will it take to reach the last pole.

Answer

The car will take 41.45 seconds to reach the last pole.

Let the distance between two poles is X.

The car takes 24 seconds to reach the 12th pole. It means it travels distance of 11X in 24 seconds.

To reach the 20th pole car has to travel 19X. So time taken to reach there is

$$= (19X * 24) / 11X$$

$$= (19 * 24) / 11$$

$$= 41.45 \text{ seconds}$$

=====

Brain Teaser No : 00032

Find the smallest number N which has the following properties:

1. its decimal representation has 6 as the last digit.

2. If the last digit 6 is erased and placed in front of the remaining digits, the resulting number is four times as great as the original number N.

Answer

The smallest such number is 153846.

Assume that the number N is

$$N = B_n B_{n-1} B_{n-2} \dots B_3 B_2 6$$

as its given that 6 is the last digit.

Now after erasing 6 and putting it in front of the remaining digits, we get

$$N_{new} = 6 B_n B_{n-1} B_{n-2} \dots B_3 B_2$$

Also given that Nnew is 4 times the N. Also note that the last digit Nnew is second last digit of N and so on. The required result is

$$\begin{array}{r} B_n B_{n-1} B_{n-2} \dots B_3 B_2 6 \\ \times 4 \\ \hline 6 B_n B_{n-1} B_{n-2} \dots B_3 B_2 \end{array}$$

$$\times 4$$

$$6 B_n B_{n-1} B_{n-2} \dots B_3 B_2$$

So start multiplying and put nth digit of Nnew to (n + 1)th digit of N and you will get result as

$$\begin{array}{r} 1 \ 5 \ 3 \ 8 \ 4 \ 6 \\ \times 4 \end{array}$$

$$\times 4$$

6 1 5 3 8 4

Hence, the number is 153846

=====
Brain Teaser No : 00167

What are the chances that at least two out of a group of fifty people share the same birthday?

Submitted by : Erin

Answer

The probability of atleast two out of a group of 50 people share the same birthday is 97%
Probability of atleast two share the same birthday = 1 - probability of all 50 have different birthdays

Probability of all 50 have different birthday
= $365/365 * 364/365 * 363/365 * \dots * 317/365 * 316/365$
= $(365 * 364 * 363 * 362 * \dots * 317 * 316)/36550$
= 0.0296264

Probability of atleast two share the same birthday
= $1 - 0.0296264$
= 0.9703735
= 97% approx.

Thus, the probability of atleast two out of a group of 50 people share the same birthday is 97%

This explains why in a school/college with classrooms of 50 students, there are at least two students with a birthday on the same day of the year. Also, if there are 23 people in the room, then there are 50% chances that atleast two of them have a birthday on the same day of the year!!!

=====
Brain Teaser No : 00168

Chintu put some Black marbles and some White marbles into a jar. He then asked his brother Pintu to take out a marble. Pintu drew out a Black marble. Chintu asked Pintu to draw out another marble, and again he drew out a Black marble. Pintu thought there must be more Black marbles than White marbles in the jar and asked Chintu, "I wonder what is the probability of me drawing a Black marble on a third try?" Chintu replied, "Exactly 9/10 of what it was of drawing a Black marble on your first draw." Can you help Pintu to determine how many marbles of each colour had been in the jar in the beginning? Give the minimal possible answer. Also, Pintu knew that there were at least seven marbles in the jar in the beginning.

Answer

There were 8 Black marbles and 4 White marbles in the jar.
Let's assume that initially there are total N marbles. Also, B and W are the number of Black and White marbles respectively. Thus, $N = B + W$
The probability of drawing a Black marble on the first draw = $B/(B+W)$
Similarly, after drawing 2 Black marbles, the probability of drawing a Black marble on the third draw = $(B-2)/(B+W-2)$
Chintu said that the probability of drawing a Black marble on third draw (after drawing Black marbles on first two draws) is exactly 9/10 of what it was of drawing a Black marble on first draw.
 $(B - 2) / (B + W - 2) = (9 / 10) * B / (B + W)$
 $10 * (B + W) * (B - 2) = 9 * B * (B + W - 2)$
 $10B^2 - 20B + 10BW - 20W = 9B^2 + 9BW - 18B$
 $B^2 - 2B + BW - 20W = 0$

We know that $N = B + W$, hence substitute $W = N - B$
 $B^2 - 2B + B(N - B) - 20(N - B) = 0$
 $B^2 - 2B + BN - B^2 - 20N + 20B = 0$
 $18B + BN - 20N = 0$
 $B(18 + N) = 20N$
 $B = 20N / (18 + N)$

Now, we know that the value of N is at least 7. Hence, using trial-n-error on the equation, the minimal value of N must be 12 so that $B=8$ and $W=4$.

Hence, initially there were 8 Black marbles and 4 White marbles in the jar.

=====

Brain Teaser No : 00669

Anna, her brother - Andre, her daughter - Ami, and her son, Adam are tennis players. As a game of doubles

1. Anna's brother is directly across the net from Ami.
2. Adam is diagonally across the net from the worst player's sibling.
3. The best player and the worst player are on the same side of the net.

Who is the best player?

Answer

The best player is Andre.

Find out all possible arrangement such that no condition is contradicted.

From (1), there are two possible arrangements. Discarding two arrangements which are identical to following two.

Andre	Anna	AND	Andre	Adam
-----			-----	
Ami	Adam		Ami	Anna
(I)			(II)	

From (2), Anna is the worst player in Case I and Adam is the worst player in Case II.

From (3), Andre is the best player in both the cases.

Hence, the best player is Andre.

=====

Brain Teaser No : 00675

Elizabeth is engaged.

- * Her fianc  is either Arthur, Barry, Colin or Derek.
- * Each of the four men and Elizabeth either always tells the truth or always lies.
- * Arthur says: "Exactly one of us four men always tells the truth."
- * Barry says: "Exactly one of us four men always tells the lies."
- * Colin says: "Arthur or Barry is Elizabeth's fianc ."
- * Elizabeth says: "My fianc  and I either both always tell truth or both always lie."

Who is Elizabeth's fianc ?

Answer

Barry is Elizabeth's fianc .

Analyse the statements made by Colin and Elizabeth first.

From (6), if Elizabeth always tells the truth, then her fianc  always tells the truth and if Elizabeth always lies, then her fianc  always tells the truth. Hence, Elizabeth's fianc  always tells the truth.

Let's assume that statement made by Colin (5) is false. Then Colin lied and Derek is the truth-telling fianc . But then statement made by Arthur can not be true (if true, then there are 2 truth-tellers which contradicts itself). And it can not be false either (if false, then there are at least 2 truth-tellers, which makes Barry's statement false and

hence there is just a one truth-teller i.e. Derek, again contradiction!!!). Hence statement made by Arthur contradicts itself. So the statement made by Colin is true i.e. Arthur or Barry is Elizabeth's fianc .

As statement made by Colin is true, the statement made by Arthur is false. Then because Elizabeth's fianc  always tells the truth, Barry is Elizabeth's fianc . Then the statement made by Barry is true and thus Derek always tells the truth. Thus, Barry is Elizabeth's fianc .

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Brain Teaser No : 00680

A group of fewer than 10 girls found a number of gold-coins which they were able to divide equally among them.

After this division had been done, Lalita - one of the girls, suggested that it would be more equitable to divide the gold-coins by families rather than by individuals. Among the them, there were two groups with two sisters, of course Lalita was not in either group. The rest of the girls were unrelated to each other. A re-division by families would have meant that the gold-coins per family were 5 more than the gold-coins per girl.

The girls argued among themselves over this way of dividing the gold-coins. Before a final decision is made, Ash - one of the girls, decided that she did not want any gold-coins. Her share was equally divided (without breaking/cutting any gold-coin) among the other girls.

Finally, Lalita decided to withdraw her suggestion of dividing the gold-coins by families. How many girls were there and how many gold-coins did each girl end up with?

Answer

There were total 6 girls. Each end up with 12 gold-coins.

The number of gold-coins is evenly divisible by the number of girls as well as the number of families.

Let's assume that N is the number of gold-coins each girl received initially and G is the total number of girls.

Then, total number of gold-coins = NG

If the gold-coins had been divided by families rather than by individuals, the number of recipients would be (G - 2) and each share would be (N + 5).

Again, total number of gold-coins = (N + 5)(G - 2)

But, the total number of the gold-coins is the same.

$$NG = (N + 5)(G - 2)$$

$$NG = NG - 2N + 5G - 10$$

$$2N = 5G - 10$$

$$N = (5/2)G - 5$$

Now, N and G are the positive integers and also total number of gold-coins must be divisible by G, (G-1) and (G-2). This is because initially there were G girls; then since it was divided family wise, the total number of units, the coins were to be divided would be (G-2) (as two groups had two sisters, so two girls got combined as one group, one per group); and after Ash backed out, there were (G-1) girls.

Now trying different EVEN values for G, starting with 2; there were total 6 girls and 60 gold-coins. The gold-coins are divided among 5 girls and hence each girl ends up with 12 gold-coins.

=====

Brain Teaser No : 00150

What are the next two letters in this sequence?

A, B, H, F, M, C, I, G, T, D, O, ?, ?

Answer

The next letters in the sequence are J, U, E, X etc.

A is the first letter of the alphabet with symmetry about the vertical axis. B is the first letter of the alphabet with symmetry about the horizontal axis. H is the first letter of the alphabet with symmetry about both, the vertical axis and the horizontal axis. F is the first letter of the alphabet with no symmetry.

The sequence then repeats with the second letter of the alphabet with symmetry about the vertical axis, the horizontal axis, both the axes and no axes i.e. M, C, I and G

The third letters of the alphabet are T, D, O and J.
The fourth letters of the alphabet are U, E, X and L.

=====

Brain Teaser No : 00160

A family photo contained:
one grandfather, one grandmother;
two fathers, two mothers;
six children, four grandchildren;
two brothers, two sisters;
three sons, three daughters;
one father-in-law, one mother-in-law, one daughter-in-law, one son-in-law
30 people you may think, but no, what is the least number of people here?

Answer

There are total 8 people.
Four children - 2 boys and 2 girls, their mother and father, and one set of grandparents -
EITHER mother's mother and father's father OR mother's father and father's mother.

=====

Brain Teaser No : 00263

There are 4 novels - Thriller, Mystery, Romance and Science Fiction - written by Ambrose, Richards, Hooper and Walsh, and published by Alpha, Beta, Gamma and Theta not in necessarily in the same order.

- * The book by Ambrose is published by Theta.
- * The Thriller is published by Alpha.
- * The Science Fiction novel is by Hooper and is not published by Gamma.
- * The Romance novel is by Walsh.

Who are the Author and the Publisher of each novels?

Answer

(Thriller-Richards-Alpha), (Mystery-Ambrose-Theta), (Romance-Walsh-Gamma), (Science Fiction-Hooper-Beta)
From (1), (2) and (3) the Science Fiction novel is by Hooper and published by Beta.
From (4) the Romance novel is by Walsh and published by Gamma.
Now it is obvious that the Mystery is published by Theta and written by Ambrose. And the Thriller is published by Alpha and written by Richards.
Novel Type Author Publisher
Thriller Richards Alpha
Mystery Ambrose Theta
Romance Walsh Gamma
Science Fiction Hooper Beta

=====

Brain Teaser No : 00103

Three friends divided some bullets equally. After all of them shot 4 bullets the total number of bullets remaining is equal to the bullets each had after division. Find the original number divided.

Answer

18

Assume that initial there were $3 * X$ bullets.

So they got X bullets each after division.

All of them shot 4 bullets. So now they have $(X - 4)$ bullets each.

But it is given that, after they shot 4 bullets each, total number of bullets remaining is equal to the bullets each had after division i.e. X

Therefore, the equation is

$$3 * (X - 4) = X$$

$$3 * X - 12 = X$$

$$2 * X = 12$$

$$X = 6$$

Therefore the total bullets before division is $= 3 * X = 18$

=====

Brain Teaser No : 00278

What are the next two in the series?

st, nd, rd, th, th, ..., ...

Submitted by : Christopher Colon

Answer

The answer is th and th

The pattern is the suffix of each number when counted i.e. 1st, 2nd, 3rd, 4th, 5th, 6th, 7th and so on

=====

Brain Teaser No : 00288

Five friends with surname Batliwala, Pocketwala, Talawala, Chunawala and Natakwala have their first name and middle name as follow.

1. Four of them have a first and middle name of Paresh.
2. Three of them have a first and middle name of Kamlesh.
3. Two of them have a first and middle name of Naresh.
4. One of them have a first and middle name of Elesh.
5. Pocketwala and Talawala, either both are named Kamlesh or neither is named Kamlesh.
6. Either Batliwala and Pocketwala both are named Naresh or Talawala and Chunawala both are named Naresh.
7. Chunawala and Natakwala are not both named Paresh.

Who is named Elesh?

Answer

Pocketwala is named Elesh.

From (1) and (7), it is clear that Batliwala, Pocketwala and Talawala are named Paresh.

From (6) and (5), if Pocketwala or Talawala both are named Kamlesh, then either of them will have three names i.e. Paresh, Kamlesh and Naresh. Hence, Pocketwala and Talawala both are not named Kamlesh. It means that Batliwala, Chunawala and Natakwala are named Kamlesh. Now it is clear that Talawala and Chunawala are named Naresh. Also, Pocketwala is named Elesh.

=====

Brain Teaser No : 00414

Sarika multiplied 414 by certain number and obtained 69958 as the answer. But she found that there is some error in the answer - both the 9s in the answer are wrong and all the other digits are correct.

Can you find the correct answer?

Answer

The correct answer is 60858.

If you divide 69958 by 414, you will get 168.98. Hence, assume some three digit number and multiply it by 414 and use 6**58 as the answer.

Assume three digit number such that

$$\begin{array}{r} * * * \\ 4 1 4 \\ \hline * * * \\ * * * 0 \\ * * * 0 0 \\ \hline 6 * * 5 8 \end{array}$$

It is obvious that the last digit of the assumed number must be 7.

$$\begin{array}{r} * * 7 \\ 4 1 4 \\ \hline * * 8 \\ * * 7 0 \\ * * 8 0 0 \\ \hline 6 * * 5 8 \end{array}$$

Now, the second last digit of the assumed number must be 4 or 9. Also, the first digit of the assumed number must be 1 as the first digit of the answer is 6. Using trial and error for above two conditions, the answer is

$$\begin{array}{r} 1 4 7 \\ 4 1 4 \\ \hline 5 8 8 \\ 1 4 7 0 \\ 5 8 8 0 0 \\ \hline 6 0 8 5 8 \end{array}$$

=====

Brain Teaser No : 00422

What are the next three numbers in the given series?

0 1 1 2 1 2 1 3 2 2 1 3 1 2 2 4 1 3 1 3 2 2 1 ? ? ?

Answer

The next three numbers are 4, 2 and 2

The pattern is - the number of factors in prime factorization of positive integers. Note that all prime number positions are 1 in the given series.

Number Prime Factorization Factors in Prime Factorization

- 1 1 0
- 2 2 1
- 3 3 1
- 4 2*2 2
- 5 5 1
- 6 2*3 2
- 7 7 1
- 8 2*2*2 3
- 9 3*3 2
- 10 2*5 2

Thus, the next few numbers in the given series are:

4 2 2 3 3 1 3 1 5 2 2 2 4 1 2 2 4 1 3 1 3 3 2 1 5 2 3 2 3 1 4 2 4 2 2 1 ...

Note that 1 is neither a Prime number nor a Composite number.

=====

Brain Teaser No : 00464

Find the next two numbers in the series:

1, 8, 11, 18, 80, 81, _, _

Answer

The next two numbers are 82 and 83.

The pattern is : the list of positive integers beginning with a VOWEL.

1(One), 8(Eight), 11(Eleven), 18(Eighteen), 80(Eighty), 81(Eighty-one)

Hence, the next numbers are 82(Eighty-two), 83(Eighty-three), 84(Eighty-four),

It is not a series comprise of 0, 1 and 8. If so, 10 must be there.

=====

Brain Teaser No : 00154

There are 4 mugs placed upturned on the table. Each mug have the same number of marbles and a statement about the number of marbles in it. The statements are: Two or Three, One or Four, Three or One, One or Two.

Only one of the statement is correct. How many marbles are there under each mug?

Answer

A simple one.

As it is given that only one of the four statement is correct, the correct number can not appear in more than one statement. If it appears in more than one statement, then more than one statement will be correct.

Hence, there are 4 marbles under each mug.

=====

Brain Teaser No : 00254

One of the four people - Mr. Clinton, his wife Monika, their son Mandy and their daughter Cindy - is a singer and another is a dancer. Mr. Clinton is older than his wife and Mady is older than his sister.

1. If the singer and the dancer are the same sex, then the dancer is older than the singer.

2. If neither the singer nor the dancer is the parent of the other, then the singer is older than the dancer.

3. If the singer is a man, then the singer and the dancer are the same age.

4. If the singer and the dancer are of opposite sex then the man is older than the woman.

5. If the dancer is a woman, then the dancer is older than the singer.

Whose occupation do you know? And what is his/her occupation?

Answer

Cindy is the Singer. Mr. Clinton or Monika is the Dancer.

From (1) and (3), the singer and the dancer, both can not be a man. From (3) and (4), if the singer is a man, then the dancer must be a man. Hence, the singer must be a woman.

CASE I : Singer is a woman and Dancer is also a woman

Then, the dancer is Monika and the singer is Cindy.

CASE II : Singer is a woman and Dancer is also a man

Then, the dancer is Mr. Clinton and the singer is Cindy.

In both the cases, we know that Cindy is the Singer. And either Mr. Clinton or Monika is the Dancer.

=====

Brain Teaser No : 00272

What are the next two numbers in this series?

1, 4, 1, 5, 9, 2, _, _

Submitted by : Alex Crosse

Answer

Next two numbers are 6 and 5.

The patten is the each digit in the value of PI after the decimal point. The value of mathematical constant PI is 3.1415926536.

=====

Brain Teaser No : 00275

There are two ropes. Each one can burn in exactly one hour. They are not necessarily of the same length or width as each other. They also are not of uniform width (may be thinner/wider in middle than on the end), thus burning half of the rope is not necessarily 1/2 hour. By burning the ropes, how do you measure exactly 45 minutes worth of time?

Answer

If you light both ends of one rope simultaneously, it will burn in exactly a 1/2 hour. Thus, burn one rope from both ends and the other rope from only one end. Once the one rope (which is burning from both ends) finally burns out (and you know a 1/2 hour has elapsed), you also know that the other rope (which is burning from only one end) has exactly 1/2 hour left to burn. Since you only want 45 minutes, light the second end of the rope. This remaining piece will burn in 15 minutes. Thus, totaling 45 minutes.

=====

Brain Teaser No : 00393

Which of the following day(s) can't be the last day of a century?

Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday

Justify your answer.

Answer

The last day of a century can not be Tuesday, Thursday or Saturday.

A normal year has 365 days whereas a leap year has 366 days. Every year which is divisible by 4 is called a leap year. Also, every 4th century is a leap year but no other century is a leap year.

1 normal year = 365 days = 52 weeks + 1 day

1 leap year = 366 days = 52 weeks + 2 day

Thus, a normal year has 1 odd day whereas a leap year has 2 odd days.

100 years

= 76 normal years + 24 leap years

= 76*[52 weeks + 1 day] + 24*[52 weeks + 2 day]

= (76*52) weeks + 76 days + (24*52) weeks + 48 days

= 5200 weeks + 124 days

= 5217 weeks + 5 days

i.e. 100 years contain 5 odd days

Similarly,

200 years contain 10 odd days i.e. 3 odd days.

300 years contain 15 odd days i.e. 1 odd days.

400 years contain (20+1) odd days i.e. 0 odd days.

Note that 400 years contain one more leap year.

Also, we have Sunday for 0 odd day, Monday for 1 odd day, Tuesday for 2 odd days, and so on...

Thus, last day of first century is Friday. (5 odd days)

Last day of second century is Wednesday. (3 odd days)

Last day of third century is Monday. (1 odd days)

Last day of fourth century is Sunday. (0 odd days)

Since the order is repeating in successive cycles, the last day of a century can not be Tuesday, Thursday or Saturday.

=====

Brain Teaser No : 00474

Given any whole number take the sum of the digits, and the product of the digits, and multiply these together to get a new whole number.

For example, starting with 6712, the sum of the digits is (6+7+1+2) = 16, and the product of the digits is (6*7*1*2) = 84. The answer in this case is then 84 x 16 = 1344.

If we do this again starting from 1344, we get (1+3+4+4) * (1*3*4*4) = 576

And yet again (5+7+6) * (5*7*6) = 3780

At this stage we know what the next answer will be (without working it out) because, as one digit is 0, the product of the digits will be 0, and hence the answer will also be 0.

Can you find any numbers to which when we apply the above mentioned rule repeatedly, we never end up at 0?

Answer

Three such numbers are 1, 135 and 144.

It seems that most numbers will eventually end up at 0 when we apply the rule repeatedly. But there are a few numbers that have the property that when we apply the rule repeatedly, we never end up at 0.

Start with 332, then we get (3+3+2) * (3*3*2) = 144

And then (1+4+4) * (1*4*4) = 144

Thus if we reach 144, we stay there however many times we apply this rule. We say that 144 is fixed by this rule. Now try 233 or 98 or 332 or 1224. They all fall into the same group i.e. we reach 144.

There is another number that is fixed by this rule; it is 1 (because the sum of the digits of 1 is 1, and the product of the digits is 1 so, starting with 1, the answer is 1 * 1 = 1).

And the third one is 135.

If you know some other numbers, do let us know.

=====

Brain Teaser No : 00510

Substitute digits for the letters to make the following addition problem true.

```

      W H O S E
      T E E T H
            A R E
+
-----
      S W O R D S

```

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter H, no other letter can be 3 and all other H in the puzzle must be 3.

Answer

It is obvious that S=1 and T=9.

Also, (H + E) should be greater than 10 and hence, (E + H + E) must 20. Thus, there are 3 possible values for (E, H) pair: (6, 8) or (7, 6) or (8, 4). Use trial-n-error and everything will fit-in.

W	H	O	S	E	2	8	5	1	6		
T	E	E	T	H	9	6	6	9	8		
		A	R	E			4	7	6		
+			A	S	+			4	1		
S	W	O	R	D	S	1	2	5	7	3	1

=====

Brain Teaser No : 00595

Substitute digits for the letters to make the following addition problem true.

				I	
	A	G	R	E	E
+			I	T	S
	T	O	U	G	H

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter S, no other letter can be 3 and all other S in the puzzle must be 3.

Answer

I=7, A=2, G=9, R=4, E=5, T=3, S=6, O=0, G=9, H=8
 It is obvious that T=A+1. Also, G=9, O=0 and R+I>10. Hence, T>1
 There must be a carry from the units. Hence E+T=8. So (E, T) can be (6, 2), (5, 3), (3, 5), (2, 6) or (1, 7).
 Now, use trial-n-error and solve it.

				I					7		
	A	G	R	E	E		2	9	4	5	5
+			I	T	S	+			7	3	6
	T	O	U	G	H		3	0	1	9	8

=====

Brain Teaser No : 00010

In a contest of intelligence, three problems A, B and C were posed.
 * Among the contestants there were 25 who solved at least one problem each.
 * Of all the contestants who did not solve problem A, the number who solved B was twice the number who solved C.
 * The number of participants who solved only problem A was one more than the number who solved problem A and at least one other problem.
 * Of all students who solved just one problem, half did not solve problem A.
 How many students solved only problem B?

Answer

6 students solved only problem B
 X => Students who solved only problem A
 Y => Students who solved only problem B
 Z => Students who solved only problem C
 P => Students who solved both problem B and problem C

From 4 :
 Students who solved only problem A = Students who solved only problem B + Students who solved only problem C

$$X = Y + Z$$

From 3 :

Students who solved problem A and at least one other = $X - 1$

From 2 :

$$(Y + P) = 2 * (Z + P)$$

$$Y + P = 2 * Z + 2 * P$$

$$Z = (Y - P) / 2$$

From 1 and Figure:

$$X + X - 1 + Y + Z + P = 25$$

$$2*X + Y + Z + P = 26$$

$$2*(Y + Z) + Y + Z + P = 26 \text{ (from 4)}$$

$$3*Y + 3*Z + P = 26$$

$$3*Y + 3*(Y - P) / 2 + P = 26 \text{ (from 2)}$$

$$6*Y + 3*Y - 3*P + 2*P = 52$$

$$9*Y - P = 52$$

$$Y = (52 + P) / 9$$

Now, it is obvious that all values are integer. Hence, P must be 2 and Y must be 6.

So 6 students solved only problem B.

=====

Brain Teaser No : 00355

Montu, Bantu, Chantu and Pintu have pets.

Montu says, "If Pintu and I each have a dog, then exactly one of Bantu and Chantu has a dog."

Bantu says, "If Chantu and I each have a cat, then exactly one of Montu and Pintu has a dog."

Chantu says, "If Montu and I each have a dog, then exactly one of Bantu and Pintu has a cat."

Pintu says, "If Bantu and I each have a cat, then exactly one of Bantu and I has a dog." One of the four is telling the truth. Who is telling the truth?

Answer

Bantu is telling the truth.

For a IF-THEN statement to be false, IF part has to be true and THEN part has to be false. Since only one statement is true and remaining three are false, IF part of three statements are true & THEN part of one statement is true. Let's put the given information in table. The pet-name in the normal text represents the IF part and the pet-name in round brackets represents the THEN part.

Montu	Bantu	Chantu	Pintu
Montu says	Dog (Dog)	(Dog)	Dog
Bantu says	(Dog)	Cat	Cat (Dog)
Chantu says	Dog (Cat)	Dog	(Cat)
Pintu says	Cat		
(Dog)	Cat		
(Dog)			

It is clear that the IF part of the statements made by Montu, Chantu and Pintu are true as they do not contradict each other. And the IF part of the statement made by Bantu is false. Thus, Bantu is telling the truth.

Montu have a Dog and may or may not have a Cat.

Bantu have a Cat.

Chantu have a Dog.

Pintu have a Dog and a Cat.

=====

Brain Teaser No : 00496

Karan bought a little box of midget matches, each one inch in length. He found that he could arrange them all in the form of a triangle whose area was just as many square inches as there were matches.

He then used up six of the matches, and found that with the remainder he could again construct another triangle whose area was just as many square inches as there were matches. And using another six matches he could again do precisely the same.

How many matches were there in the box originally?

Note that the match-box can hold maximum of 50 matches.

Answer

Initially, there were 42 or 36 matches in the match-box.

There are 42 matches in the box with which he could form a triangle 20, 15, 7, with an area of 42 square inches. After 6 matches had been used, the remaining 36 matches would form a triangle 17, 10, 9, with an area of 36 square inches. After using another 6 matches, the remaining 30 matches would form a triangle 13, 12, 5, with an area of 30 square inches. After using another 6, the 24 remaining would form a triangle 10, 8, 6, with an area of 24 square inches.

Thus, there are two possible answers. There were either 42 or 36 matches in the match-box. Also it is interesting to know that there are just 5 such triangles for which the perimeter and the area is the same (assuming all sides are integers) and they are :

1. 24 (10, 8, 6)
2. 30 (13, 12, 5)
3. 36 (17, 10, 9)
4. 42 (20, 15, 7)
5. 60 (29, 25, 6)

=====

Brain Teaser No : 00524

Last Saturday Milan went for the late night show and came late. In the morning family members asked him which movie did he see. He gave different answers to everyone.

- * He told to his father that he had gone to see MONEY.
- * According to his mom, he saw either JOHNY or BABLU.
- * His elder brother came to know that he saw BHABI.
- * To his sister, he told ROBOT.
- * And his grandpa heard that he saw BUNNY.

Thus, Milan gave six movie names, all five letter words. But he saw some other movie with five letter word. Moreover, each of the six movie names mentioned above has exactly two letters common with the movie he saw. (with the same positions)

Can you tell which movie did Milan see?

Answer

Milan saw BOBBY.

The six movie names are - MONEY, JOHNY, BABLU, BHABI, ROBOT and BUNNY.

Compare MONEY and JOHNY. They have O common at the second place and Y common at the fifth place. Also, they can't have two different letters each, common with the required movie as the letters in remaining three places are all different. Thus, the required movie must have either O at the second place or Y at the fifth place or both.

Similarly, comparing JOHNY and BUNNY - the required movie must have either N at the fourth place or Y at the fifth place or both. Also, comparing MONEY and BUNNY - the required movie must have either N at the third place or Y at the fifth place or both.

From the above 3 deduction, either Y is at fifth place or O is at the second place and N is at the third & fourth place. The later combination is not possible as BABLU, BHABI & ROBOT will need at least 3 other letters which makes the required movie 6 letter long. Hence, the required movie must have Y at the fifth place.

Now Y is not there in BABLU and BHABI at the fifth place and they have only B common at the first place. Hence, B must be the first letter.

As B is at the first place and Y is at the fifth place and every movie has exactly 2 letters common with the required movie. From BUNNY, the required movie do not have U at the second place and N at the third and fourth place. Now looking at JOHNY and MONEY, they must have O common at the second place.

Using the same kind of arguments for BABLU, BHABI and ROBOT, we can conclude that Milan saw BOBBY.

=====

Brain Teaser No : 00499

Six cabins numbered 1-6 consecutively, are arranged in a row and are separated by thin dividers. These cabins must be assigned to six staff members based on following facts.

1. Miss Shalaka's work requires her to speak on the phone frequently throughout the day.
2. Miss Shudha prefers cabin number 5 as 5 is her lucky number.
3. Mr. Shaan and Mr. Sharma often talk to each other during their work and prefers to have adjacent cabins.
4. Mr. Sinha, Mr. Shaan and Mr. Solanki all smoke. Miss Shudha is allergic to smoke and must have non-smokers adjacent to her.
5. Mr. Solanki needs silence during work.

Can you tell the cabin numbers of each of them?

Answer

The cabins from left to right (1-6) are of Mr. Solanki, Mr. Sinha, Mr. Shaan, Mr. Sharma, Miss Shudha and Miss Shalaka.

From (2), cabin number 5 is assigned to Miss Shudha.

As Miss Shudha is allergic to smoke and Mr. Sinha, Mr. Shaan & Mr. Solanki all smoke, they must be in cabin numbers 1, 2 and 3 not necessarily in the same order. Also, Miss Shalaka and Mr. Sharma must be in cabin 4 and 6.

From (3), Mr. Shaan must be in cabin 3 and Mr. Sharma must be in cabin 4. Thus, Miss Shalaka is in cabin 6.

As Mr. Solanki needs silence during work and Mr. Shaan is in cabin 3 who often talks to Mr. Sharma during work, Mr. Solanki must be in cabin 1. Hence, Mr. Sinha is in cabin 2.

Thus, the cabins numbers are

- 1# Mr. Solanki,
- 2# Mr. Sinha,
- 3# Mr. Shaan,
- 4# Mr. Sharma,
- 5# Miss Shudha,
- 6# Miss Shalaka

=====

Brain Teaser No : 00541

A CAR has a value of 1 and a TRACTOR has a value of 2.

What is the value of an AIRPLANE? Note that AIRPLANE costs more than CAR or TRACTOR.

Submitted by : Lynda

Answer

AIRPLANE has a value of 4.

The value of each vehicle equals the total number of vowels in the word.

CAR has 1 vowel i.e. A

TRACTOR has 2 vowels i.e. A O

AIRPLANE has 4 vowels i.e. A I A E

There is one more possible answer: The value of each vehicle equals the total number of DISTINCT vowels in the word. So the value of AIRPLANE will be 3.

=====

Brain Teaser No : 00235

Consider a number 235, where last digit is the sum of first two digits i.e. $2 + 3 = 5$. How many such 3-digit numbers are there?

Answer

There are 45 different 3-digit numbers.

The last digit can not be 0.

If the last digit is 1, the only possible number is 101. (Note that 011 is not a 3-digit number)

If the last digit is 2, the possible numbers are 202 and 112.

If the last digit is 3, the possible numbers are 303, 213 and 123.

If the last digit is 4, the possible numbers are 404, 314, 224 and 134.

If the last digit is 5, the possible numbers are 505, 415, 325, 235 and 145.

Note the pattern here - If the last digit is 1, there is only one number. If the last digit is 2, there are two numbers. If the last digit is 3, there are three numbers. If the last digit is 4, there are four numbers. If the last digit is 5, there are five numbers. And so on.....

Thus, total numbers are

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 45$$

Altogether then, there are 45 different 3-digit numbers, where last digit is the sum of first two digits.

=====

Brain Teaser No : 00284

While sitting in a club where all single men tell the truth and all married men lie, a woman is approached by three men.

She asks the first guy if he is married, but the music is so loud that she can not hear his answer.

So she turns to the second guy, who tells her, "The first guy said, 'I am married', but he is really single."

Then she turns to the third guy, who says, "The second guy is single."

Can you determine the marital status of each of the three men?

Submitted by : Marie

Answer

All three are married.

A single man would always say that he is single. And a married man would also always say that he is single. It means that no man in the club would say that he is married. Thus, the second man is lying, so the second man is married.

Since the second man (always lies) says the first man is single, the first man is married. Similarly, the third man incorrectly says that the second man is single. Hence, the third man is lying and he is married.

Thus, all three are lying and hence, married.

=====

Brain Teaser No : 00435

Substitute digits for the letters to make the following Division true

```

      G E T
-----
N U T | G I N G E R
      |   N U T
-----
      E I N E
      G U A O
-----
      T T O R

```

E O G D

U A O

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter U, no other letter can be 3 and all other U in the puzzle must be 3.
Submitted by : Calon

Answer

I=0, G=1, E=2, T=3, A=4, R=5, O=6, U=7, N=8, D=9
At a first glance, it is obvious that G=1, E=2 and T=3. Everything else is pretty simple now.

```

      1 2 3
-----
8 7 3 | 1 0 8 1 2 5
      |  8 7 3
-----
      2 0 8 2
      1 7 4 6
-----
      3 3 6 5
      2 6 1 9
-----
      7 4 6

```

=====

Brain Teaser No : 00023

There is a grid of 20 squares by 10 squares. How many different rectangles are possible? Note that square is a rectangle.

Answer

11550
The Generic solution to this is:
Total number of rectangles = (Summation of row numbers) * (Summation of column numbers)
Here there are 20 rows and 10 columns or vice versa. Hence, total possible rectangles
= (20 + 19 + 18 + 17 + 16 + + 3 + 2 + 1) * (10 + 9 + 8 + 7 + + 3 + 2 + 1)
= (210) * (55)
= 11550
Hence, total 11,550 different rectangles are possible.
If you don't believe it, try formula on some smaller grids like 4x2, 3x2, 3x3 etc...

=====

Brain Teaser No : 00115

Four prisoners escape from a prison.
The prisoners, Mr. East, Mr. West, Mr. South, Mr. North head towards different directions after escaping.
The following information of their escape was supplied:
* The escape routes were North Road, South Road, East Road and West Road
* None of the prisoners took the road which was their namesake
* Mr. East did not take the South Road
* Mr. West did not take the South Road
* The West Road was not taken by Mr. East
What road did each of the prisoners take to make their escape?

Answer

Put all the given information into the table structure as follow:

North Road South Road East Road West Road

Mr. North No

Mr. South No

Mr. East No No No

Mr. West No No

Now from table, two things are obvious and they are:

* Mr.North took the South Road

* Mr.East took the North Road

Put this information into the table, Also keep in mind that the prisoners head towards different directions after escaping.

North Road South Road East Road West Road

Mr. North No YES No No

Mr. South No No

Mr. East YES No No No

Mr. West No No No

Now from the table:

* Mr.West took the East Road

* Mr.South took the West Road

So the answer is:

* Mr.North took the South Road

* Mr.South took the West Road

* Mr.East took the North Road

* Mr.West took the East Road

=====

Brain Teaser No : 00216

When Socrates was imprisoned for being a disturbing influence, he was held in high esteem by his guards. All four of them hoped that something would occur that would facilitate his escape. One evening, the guard who was on duty intentionally left the cell door open so that Socrates could leave for distant parts.

Socrates did not attempt to escape, as it was his philosophy that if you accept society's rules, you must also accept it's punishments. However, the open door was considered by the authorities to be a serious matter. It was not clear which guard was on that evening. The four guards make the following statements in their defense:

Aaron:

A) I did not leave the door open.

B) Clement was the one who did it.

Bob:

A) I was not the one who was on duty that evening.

B) Aaron was on duty.

Clement:

A) Bob was the one on duty that evening.

B) I hoped Socrates would escape.

David:

A) I did not leave the door open.

B) I was not surprised that Socrates did not attempt to escape.

Considering that, in total, three statements are true, and five statements are false, which guard is guilty?

Answer

David is the guilty.

Note that "All four of them hoped that something would occur that would facilitate his escape". It makes Clement's statement B True and David's statement B False.

Now consider each of them as a guilty, one at a time.

Aaron Bob Clement David True

Stmts

A B A B A B A B

If Aaron is guilty False False True True False True True False 4

If Bob is guilty True False False False True True True False 4

If Clement is guilty True True True False False True True False 5

If David is guilty True False True False False True False False 3

Since in total, three statements are true and five statements are false. It is clear from the above table that David is the guilty.

=====

Brain Teaser No : 00296

Substitute digits for the letters to make the following subtraction problem true.

```
  S A N T A
- C L A U S
-----
  X M A S
```

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter M, no other letter can be 3 and all other M in the puzzle must be 3.

Answer

One of the simplest brain teaser as there are total 26 possible answers.

It is obvious that $S=C+1$. Since $A-S=S$, it is clear that $A=2*S$ or $2*s-10$. Also, L and X are interchangeable.

```
SANTA - CLAUS = XMAS
24034 - 16492 = 7542
24034 - 17492 = 6542
24074 - 15432 = 8642
24074 - 18432 = 5642
24534 - 16492 = 8042
24534 - 18492 = 6042
24794 - 16452 = 8342
24794 - 18452 = 6342
24804 - 15462 = 9342
24804 - 19462 = 5342
24974 - 16432 = 8542
24974 - 18432 = 6542
36806 - 27643 = 9163
36806 - 29643 = 7163
36156 - 27693 = 8463
36156 - 28693 = 7463
62132 - 54206 = 7926
62132 - 57206 = 4926
62172 - 53246 = 8926
62172 - 58246 = 3926
62402 - 53276 = 9126
62402 - 59276 = 3126
62712 - 53286 = 9426
```

62712 - 59286 = 3426
62932 - 58206 = 4726
62932 - 54206 = 8726

=====

Brain Teaser No : 00844

Scientist decided to do a study on the population growth of rabbits. Inside a controlled environment, 1000 rabbits were placed.

Six months later, there were 1000Z rabbits. At the beginning of the 3rd year, there were roughly 2828Z rabbits, which was 4 times what the scientists placed in there at the beginning of the 1st year.

If Z is a positive variable, how many rabbits would be there at the beginning of the 11th year?

Submitted by : David Johnson

Answer

At the beginning of the 11th year, there would be 1,024,000 rabbits.

At the beginning, there were 1000 rabbits. Also, there were 4000 rabbits at the beginning of third year which is equal to 2828Z. Thus, $Z = 4000/2828$ i.e. 1.414 (the square root of 2)

Note that 2828Z can be represented as $2000*Z*Z$ ($Z=1.414$), which can be further simplified as $1000*Z*Z*Z*Z$

Also, it is given that at the end of 6 months, there were 1000Z rabbits.

It is clear that the population growth is 1.414 times every six months i.e. 2 times every year. After N years, the population would be $1000*(Z^{(2N)})$ i.e. $1000*(2^N)$

Thus, at the beginning of the 11th year (i.e. after 10 years), there would be $1000*(2^{10})$ i.e. 1,024,000 rabbits.

=====

Brain Teaser No : 00036

A number of 9 digits has the following properties:

* The number comprising the leftmost two digits is divisible by 2, that comprising the leftmost three digits is divisible by 3, the leftmost four by 4, the leftmost five by 5, and so on for the nine digits of the number i.e. the number formed from the first n digits is divisible by n, $2 \leq n \leq 9$.

* Each digit in the number is different i.e. no digits are repeated.

* The digit 0 does not occur in the number i.e. it is comprised only of the digits 1-9 in some order.

Find the number.

Answer

The answer is 381654729

One way to solve it is Trial-&-Error. You can make it bit easier as odd positions will always occupy ODD numbers and even positions will always occupy EVEN numbers. Further 5th position will contain 5 as 0 does not occur.

The other way to solve this problem is by writing a computer program that systematically tries all possibilities.

=====

Brain Teaser No : 00127

Grass in lawn grows equally thick and in a uniform rate. It takes 24 days for 70 cows and 60 days for 30 cows to eat the whole of the grass.

How many cows are needed to eat the grass in 96 days?

Answer

20 cows
g - grass at the beginning
r - rate at which grass grows, per day
y - rate at which one cow eats grass, per day
n - no of cows to eat the grass in 96 days

From given data,
 $g + 24*r = 70 * 24 * y$ ----- A
 $g + 60*r = 30 * 60 * y$ ----- B
 $g + 96*r = n * 96 * y$ ----- C

Solving for (B-A),
 $(60 * r) - (24 * r) = (30 * 60 * y) - (70 * 24 * y)$
 $36 * r = 120 * y$ ----- D

Solving for (C-B),
 $(96 * r) - (60 * r) = (n * 96 * y) - (30 * 60 * y)$
 $36 * r = (n * 96 - 30 * 60) * y$
 $120 * y = (n * 96 - 30 * 60) * y$ [From D]
 $120 = (n * 96 - 1800)$
 $n = 20$

Hence, 20 cows are needed to eat the grass in 96 days.

Brain Teaser No : 00164

Substitute digits for the letters to make the following relation true.

```

      W O R L D
    + T R A D E
    -----
      C E N T E R

```

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter W, no other letter can be 3 and all other W in the puzzle must be 3.

Answer

A tough one.

It is obvious that C=1. Also, the maximum possible value of E is 7. Now, start putting possible values of D, E and R as they occur frequently and use trial-n-error.

```

      W O R L D          5 3 6 8 4
    + T R A D E          + 7 6 0 4 2
    -----
      C E N T E R          1 2 9 7 2 6

```

Brain Teaser No : 00391

In the following multiplication, certain digits have been replaced with asterisks (*). Replace all the asterisks such that the problem holds the result.

```

      * * 7
    X 3 * *
    -----
      * 0 * 3
      * 1 *
    * 5 *
    -----
    * 7 * * 3

```

Answer

A simple one.

```

      1  1  7
X    3  1  9
-----
      1  0  5  3
      1  1  7
3    5  1
-----
      3  7  3  2  3

```

=====

Brain Teaser No : 00468

A blindfolded man is asked to sit in the front of a carrom board. The holes of the board are shut with lids in random order, i.e. any number of all the four holes can be shut or open.

Now the man is supposed to touch any two holes at a time and can do the following.

- * Open the closed hole.
- * Close the open hole.
- * Let the hole be as it is.

After he has done it, the carrom board is rotated and again brought to some position. The man is again not aware of what are the holes which are open or closed.

How many minimum number of turns does the blindfolded man require to either open all the holes or close all the holes?

Note that whenever all the holes are either open or close, there will be an alarm so that the blindfolded man will know that he has won.

Submitted by : Vikrant Ramteke

Answer

The blindfolded man requires 5 turns.

1. Open two adjacent holes.
2. Open two diagonal holes. Now atleast 3 holes are open. If 4th hole is also open, then you are done. If not, the 4th hole is close.
3. Check two diagonal holes.
 - * If one is close, open it and all the holes are open.
 - * If both are close, open any one hole. Now, two holes are open and two are close. The diagonal holes are in the opposite status i.e. in both the diagonals, one hole is open and one is close.
4. Check any two adjacent holes.
 - * If both are open, close both of them. Now, all holes are close.
 - * If both are close, open both of them. Now, all holes are open.
 - * If one is open and one is close, invert them i.e. close the open hole and open the close hole. Now, the diagonal holes are in the same status i.e. two holes in one diagonal are open and in other are close.
5. Check any two diagonal holes.
 - * If both are open, close both of them. Now, all holes are close.
 - * If both are close, open both of them. Now, all holes are open.

=====

Brain Teaser No : 00807

How many possible combinations are there in a 3x3x3 rubics cube?
 In other words, if you wanted to solve the rubics cube by trying different combinations, how many might it take you (worst case senerio)?

How many for a 4x4x4 cube?

Submitted by : Sarah Flod

Answer

There are 4.3252×10^{19} possible combinations for 3x3x3 Rubics and 7.4012×10^{45} possible combinations for 4x4x4 Rubics.

Let's consider 3x3x3 Rubics first.

There are 8 corner cubes, which can be arranged in $8!$ ways.

Each of these 8 cubes can be turned in 3 different directions, so there are 3^8 orientations altogether. But if you get all but one of the corner cube into chosen positions and orientations, only one of 3 orientations of the final corner cube is possible. Thus, total ways corner cubes can be placed = $(8!) \times (3^8)/8 = (8!) \times (3^7)$

Similarly, 12 edge cubes can be arranged in $12!$ ways.

Each of these 12 cubes can be turned in 2 different directions, so there are 2^{12} orientations altogether. But if you get all but one of the edge cube into chosen positions and orientations, only one of 2 orientations of the final edge cube is possible. Thus, total ways edge cubes can be placed = $(12!) \times (2^{12})/2 = (12!) \times (2^{11})$

Here, we have essentially pulled the cubes apart and stuck cubes back in place wherever we please. In reality, we can only move cubes around by turning the faces of the cubes. It turns out that you can't turn the faces in such a way as to switch the positions of two cubes while returning all the others to their original positions. Thus if you get all but two cubes in place, there is only one attainable choice for them (not $2!$). Hence, we must divide by 2.

Total different possible combinations are

$$= [(8!) \times (3^7)] \times [(12!) \times (2^{11})] / 2$$

$$= (8!) \times (3^7) \times (12!) \times (2^{10})$$

$$= 4.3252 \times 10^{19}$$

Similarly, for 4x4x4 Rubics total different possible combinations are

$$= [(8!) \times (3^7)] \times [(24!)] \times [(24!) / (4!^6)] / 24$$

$$= 7.4011968 \times 10^{45}$$

Note that there are 24 edge cubes, which you can not turn in 2 orientations (hence no $2^{24} / 2$). Also, there are 4 center cubes per face i.e. $(24!) / (4!^6)$. You can switch 2 cubes without affecting the rest of the combination as $4*4*4$ has even dimensions (hence no division by 2). But pattern on one side is rotated in 4 directions over 6 faces, hence divide by 24.

=====

Brain Teaser No : 00093

There is a number that is 5 times the sum of its digits. What is this number? Answer is not 0.

Answer

The number is 45, simply because

$$45 = 5 \times (4 + 5)$$

How does one find this number?

Let T be the digit in the tens place and U be the digit in the units place. Then, the number is $10*T + U$, and the sum of its digits is $T + U$.

The following equation can be readily written:

$$10*T + U = 5*(T + U) \text{ or}$$

$$10*T + U = 5*T + 5*U \text{ or}$$

$$5*T = 4*U$$

$$\text{Thus, } T / U = 4 / 5$$

Since T and U are digits, T must be 4 and U must be 5.

=====

Brain Teaser No : 00273

Eleven boys and girls wait to take their seats in the same row in a movie theater. There are exactly 11 seats in the row.

They decided that after the first person sits down, the next person has to sit next to the first. The third sits next to one of the first two and so on until all eleven are seated. In other words, no person can take a seat that separates him/her from at least one other person.

How many different ways can this be accomplished? Note that the first person can choose any of the 11 seats.

Answer

There are 1024 different ways.

This is the type of Brain Teaser that can be solved using the method of induction.

If there is just a one person and one seat, that person has only one option.

If there are two persons and two seats, it can be accomplished in 2 different ways.

If there are three persons and three seats, it can be accomplished in 4 different ways.

Remember that no person can take a seat that separates him/her from at least one other person.

Similarly, four persons and four seats produce 8 different ways. And five persons with five seats produce 16 different ways.

It can be seen that with each additional person and seat, the different ways increase by the power of two. For six persons with six seats, there are 32 different ways.

For any number N, the different possible ways are $2^{(N-1)}$

Thus, for 11 persons and 11 seats, total different ways are 210 i.e. 1024

=====

Brain Teaser No : 00340

Find the next in the set:

AZFR, LARU, AMAS, SBNS, KICI, ????

Submitted by : Milind Gadagkar

Answer

The next word in the series is AAEA.

If you collect the corresponding letter from each word, they are names of the places.

Consider the following five names :

A L A S K A

Z A M B I A

F R A N C E

R U S S I A

First letter of each word : A Z F R

Second letter of each word : L A R U

Third letter of each word : A M A A

Forth letter of each word : S B N S

Fifth letter of each word : K I C I

Sixth letter of each word : A A E A

Hence, the answer is AAEA.

=====

Brain Teaser No : 00477

Suppose five bales of hay are weighed two at a time in all possible ways. The weights in pounds are 110, 112, 113, 114, 115, 116, 117, 118, 120, and 121.

How much does each bale weigh?

Submitted by : Travis Lara

Answer

They weigh 54, 56, 58, 59, 62 pounds.

Let's assume that the weight of five bales are B1, B2, B3, B4 and B5 pounds respectively.

Also, $B1 \leq B2 \leq B3 \leq B4 \leq B5$

It is given that five bales of hay are weighed two at a time in all possible ways. It means that each of the bale is weighted four times.

Thus,
 $4*(B1 + B2 + B3 + B4 + B5) = (110 + 112 + 113 + 114 + 115 + 116 + 117 + 118 + 120 + 121)$
 $4*(B1 + B2 + B3 + B4 + B5) = 1156$
 $(B1 + B2 + B3 + B4 + B5) = 289$ pounds
Now, B1 and B2 must add to 110 as they are the lightest one.
 $B1 + B2 = 110$
Similarly, B4 and B5 must add to 121 as they are the heaviest one.
 $B4 + B5 = 121$

From above three equation, we get $B3 = 58$ pounds
Also, it is obvious that B1 and B3 will add to 112 - the next possible higher value.
Similarly, B3 and B5 will add to 120 - the next possible lower value.
 $B1 + B3 = 112$
 $B3 + B5 = 120$

Substituting $B3 = 58$, we get $B1 = 54$ and $B5 = 62$
From 2 & 3 equations, we get $B2 = 56$ and $B4 = 59$

Hence, the weight of five bales are 54, 56, 58, 59 and 62 pounds.

=====

Brain Teaser No : 00461

Buffalo produces 10 pounds of milk daily, a cow produces 1 pound of milk daily, and sheep produce 1/4 pound of milk daily.
I need exactly 100 pounds of milk from exactly 100 different animals daily. Also, I should use all 3 types of animals.
How do I get it?
Submitted by : JK

Answer

There are 7 possible answers to it.
Assume that there are B Buffaloes, C Cows and S Sheep.
It is given that a Buffalo produces 10 pounds of milk, a Cow produces 1 pound of mile and a Sheep produces 0.25 pound of milk. Also, we need 100 pound of milk from exactly 100 animals, we get 2 equations.
 $10*B + C + 0.25*S = 100$ ----- (I)
 $B + C + S = 100$ ----- (II)
Subtracting equation (II) from equation (I)
 $9*B - 0.75*S = 0$
 $36*B - 3*S = 0$ (multiplied by 4)
 $12*B - S = 0$ (division by 3)
 $12*B = S$

Now, for different values of B, we will get multiple solutions.

- * 1 Buffalo, 12 Sheep, 87 Cows
- * 2 Buffaloes, 24 Sheep, 74 Cows
- * 3 Buffaloes, 36 Sheep, 61 Cows
- * 4 Buffaloes, 48 Sheep, 48 Cows
- * 5 Buffaloes, 60 Sheep, 35 Cows
- * 6 Buffaloes, 72 Sheep, 22 Cows
- * 7 Buffaloes, 84 Sheep, 9 Cows

=====

Brain Teaser No : 00526

What are the next two number in the series?
1, 2, 4, 7, 28, 33, 198, ?, ?

Answer

The next two numbers are 205 and 1640.

The pattern is : $1 + 1 * 2 + 3 * 4 + 5 * 6 + 7 * 8 + 9 * 10$ or to the current number add and multiply alternatively by the number's position to get the next number.

First number = 1
Second number = $1 + 1 = 2$
Third number = $2 * 2 = 4$
Fourth number = $4 + 3 = 7$
Fifth number = $7 * 4 = 28$
Sixth number = $28 + 5 = 33$
Seventh number = $33 * 6 = 198$
Eighth number = $198 + 7 = 205$
Ninth number = $205 * 8 = 1640$
Tenth number = $1640 + 9 = 1649$

=====

Brain Teaser No : 00537

There is a 4-character code, with 2 of them being letters and the other 2 being numbers. How many maximum attempts would be necessary to find the correct code? Note that the code is case-sensitive.

Submitted by : Destructo_girl

Answer

The maximum number of attempts required are 16,22,400
There are 52 possible letters - a to z and A to Z, and 10 possible numbers - 0 to 9. Now, 4 characters - 2 letters and 2 numbers, can be selected in $52 * 52 * 10 * 10$ ways. These 4 characters can be arranged in $4C2$ i.e. 6 different ways - the number of unique patterns that can be formed by lining up 4 objects of which 2 are distinguished one way (i.e. they must be letters) and the other 2 are distinguished another way (i.e. they must be numbers).

Consider an example : Let's assume that @ represents letter and # represents number. the 6 possible ways of arranging them are : @@##, @#@#, @##@, #@@#, #@#@, ##@@

Hence, the required answer is
 $= 52 * 52 * 10 * 10 * 6$
 $= 16,22,400$ attempts
 $= 1.6$ million approx.

Thanks to Tim Sanders for opening BrainVista's brain !!!

=====

Brain Teaser No : 00643

A, B and C are three points on a straight line, not necessarily equidistant with B being between A and C. Three semicircles are drawn on the same side of the line with AB, BC and AC as the diameters. BD is perpendicular to the line ABC, and D lies on the semicircle AC. If the funny shaped diagram between the three semicircles has an area of 1000 square cms, find the length of BD.

Answer

The length of BD is 35.68 cms
There are 3 right-angled triangles - ABD, CBD and ADC.
From ABD, $AB^2 + BD^2 = AD^2$ ----- I
From CBD, $CB^2 + BD^2 = CD^2$ ----- II
From ADC, $AD^2 + CD^2 = AC^2$ ----- III

Adding I and II,
 $AB^2 + BC^2 + 2*BD^2 = AD^2 + CD^2$ ----- IV

FROM III and IV
 $AB^2 + BC^2 + 2*BD^2 = AC^2$
 $AB^2 + BC^2 + 2*BD^2 = (AB+CB)^2$
 $2*BD^2 = 2*AB*CB$
 $BD^2 = AB*CB$
 $BD = \text{SQRT}(AB*CB)$

Given that funny shaped diagram between three semicircles has an area of 1000 square cms.
 $[\text{PI}/2 * (AC/2)^2] - [\text{PI}/2 * (AB/2)^2] - [\text{PI}/2 * (BC/2)^2] = 1000$
 $\text{PI}/8 * [AC^2 - AB^2 - BC^2] = 1000$
 $\text{PI} * [(AB+BC)^2 - AB^2 - BC^2] = 8000$
 $\text{PI} * [2*AB*BC] = 8000$
 $AB * BC = 4000/\text{PI}$

Hence $BD = \text{SQRT}(4000/\text{PI}) = 35.68$ cms
 where $\text{PI} = 3.141592654$

Hence, the length of BD is 35.68 cms.

=====

Brain Teaser No : 00142

There are four groups of Mangoes, Apples and Bananas as follows:

- Group I : 1 Mango, 1 Apples and 1 Banana
- Group II : 1 Mango, 5 Apples and 7 Bananas
- Group III : 1 Mango, 7 Apples and 10 Bananas
- Group IV : 9 Mango, 23 Apples and 30 Bananas

Group II costs Rs 300 and Group III costs Rs 390.
 Can you tell how much does Group I and Group IV cost?

Answer

Group I costs Rs 120 and Group IV costs Rs 1710
 Assume that the values of one mango, one apple and one banana are M, A and B respectively.
 From Group II : $M + 5A + 7B = 300$
 From Group III : $M + 7A + 10B = 390$

Subtracting above to equations : $2A + 3B = 90$

For Group I :
 $= M + A + B$
 $= (M + 5A + 7B) - (4A + 6B)$
 $= (M + 5A + 7B) - 2(2A + 3B)$
 $= 300 - 2(90)$
 $= 300 - 180$
 $= 120$

Similarly, for Group IV :
 $= 9M + 23A + 30B$
 $= 9(M + 5A + 7B) - (22A + 33B)$
 $= 9(M + 5A + 7B) - 11(2A + 3B)$
 $= 9(300) - 11(90)$
 $= 2700 - 990$
 $= 1710$

Thus, Group I costs Rs 120 and Group IV costs Rs 1710.

=====

In Column-I below, are given some words. These have been translated into a code language. The code equivalents of the words in Column-I are given in Column-II, not necessarily opposite to the corresponding words. Also, the codes for the different letters in each word have also not been given the same order as these letter occur in the original word.

COLUMN-I	COLUMN-II
TAPE	moi
COP	lhhpok
TIE	nls
ROTATE	nhpk
SAY	nkpl
TREAT	msr
YEAR	khlph
SIP	hrp
TYRE	pmlh

Can you decode the individual letter codes?

Answer

We first find the exact codes of the each given words.

ROTATE is a 6-letter word. So its code is lhhpok. And h is for T.

TREAT is a 5-letter word. So its code is khlph.

The 4-letter words are TAPE, YEAR, TYRE and codes are nhpk, nkpl, pmlh. YEAR and TYRE have 3 letters in common (Y, E, R). They must be either nhpk or nkpl. Hence, the code for TAPE is pmlh and m is for P. Also the code for TYRE is nhpk (as h is for T) and the code for YEAR is nkpl.

The 3-letter words are COP, TIE, SAY, SIP and codes are moi, nls, msr, hrp.

The code for TIE is hrp.

The code for SIP is msr.

The code for COP is moi. And the code for SAY is nls.

Thus, the words and their codes are:

ROTATE	lhhpok
TREAT	khlph
TAPE	pmlh
TYRE	nhpk
YEAR	nkpl
TIE	hrp
COP	moi
SIP	msr
SAY	nls

So far we know that h is for T and m is for P.

In SAY and SIP, the common letter is S stands for s.

In TYRE and SAY, the common letter Y stands for n.

Thus, in SAY, the remaining letter A stands for l.

In TIE and SIP, the common letter I stands for r.

Thus, in TIE, the remaining letter E stands for p.

In ROTATE and COP, the common letter O stands for o.

Thus, in ROTATE, the remaining letter R stands for k.

Also, in COP, the remaining letter C stands for i.

Summerizing h-T, i-C, k-R, l-A, m-P, n-Y, o-O, p-E, r-I, s-S

=====

What are the next two letters in the series?

E, O, E, R, E, X, N, T, E, _, _

Submitted by : Katie Cinquegrana

Answer

The next two letters in the series are N and N

The pattern is - Last letter of the numbers starting from 1 when written in English i.e. onE, twO, threE, fouR, fivE, siX, sevenN, eightT, ninE, teN, elevenN, twelveE, etc...

=====

Brain Teaser No : 00274

Find all sets of consecutive integers that add up to 1000.

Submitted by : James Barberousse

Answer

There are total 8 such series:

1. Sum of 2000 numbers starting from -999 i.e. summation of numbers from -999 to 1000.
 $(-999) + (-998) + (-997) + \dots + (-1) + 0 + 1 + 2 + \dots + 997 + 998 + 999 + 1000$
 $= 1000$
2. Sum of 400 numbers starting from -197 i.e. summation of numbers from -197 to 202.
 $(-197) + (-196) + (-195) + \dots + (-1) + 0 + 1 + 2 + \dots + 199 + 200 + 201 + 202 =$
 1000
3. Sum of 125 numbers starting from -54 i.e. summation of numbers from -54 to 70.
 $(-54) + (-53) + (-52) + \dots + (-1) + 0 + 1 + 2 + \dots + 68 + 69 + 70 = 1000$
4. Sum of 80 numbers starting from -27 i.e. summation of numbers from -27 to 52.
 $(-27) + (-26) + (-25) + \dots + (-1) + 0 + 1 + 2 + \dots + 50 + 51 + 52 = 1000$
5. Sum of 25 numbers starting from 28 i.e. summation of numbers from 28 to 52.
 $28 + 29 + 30 + 31 + 32 + 33 + 34 + 35 + 36 + 37 + 38 + 39 + 40 + 41 + 42 + 43 + 44 +$
 $45 + 46 + 47 + 48 + 49 + 50 + 51 + 52 = 1000$
6. Sum of 16 numbers starting from 55 i.e. summation of numbers from 55 to 70.
 $55 + 56 + 57 + 58 + 59 + 60 + 61 + 62 + 63 + 64 + 65 + 66 + 67 + 68 + 69 + 70 = 1000$
7. Sum of 5 numbers starting from 198 i.e. summation of numbers from 198 to 202.
 $198 + 199 + 200 + 201 + 202 = 1000$
8. Sum of 1 number starting from 1000.
 $1000 = 1000$

=====

Brain Teaser No : 00437

One side of the bottom layer of a triangular pyramid has 12 balls. How many are there in the whole pyramid?

Note that the pyramid is equilateral and solid.

Submitted by : Angela Parr

Answer

There are total 364 balls.

As there are 12 balls along one side, it means that there are 12 layers of balls. The top most layer has 1 ball. The second layer has 3 (1+2) balls. The third layer has 6 (1+2+3) balls. The fourth layer has 10 (1+2+3+4) balls. The fifth layer has 15 (1+2+3+4+5) balls. Similarly, there are 21, 28, 36, 45, 55, 66 and 78 balls in the remaining layers.

Hence, the total number of balls are

$$= 1 + 3 + 6 + 10 + 15 + 21 + 28 + 36 + 45 + 55 + 66 + 78$$

$$= 364 \text{ balls}$$

=====

Brain Teaser No : 00146

Sachin, Dravid and Ganguly played in a Cricket match between India and England.

* None of them scored more than 99 runs.

* If you add the digits of the runs scored by Sachin to his own score, you will get the runs scored by Dravid.

* If you reverse the digits of the runs scored by Dravid, you will get the runs scored by Ganguly.

* The total runs scored by them is 240.

Can you figure out their individual scores?

Answer

Sachin, Dravid and Ganguly scored 75, 87 and 78 respectively.

Sachin's score must be less than 86, otherwise Dravid's score would be more than 99. Also, he must have scored atleast 42 - incase Dravid and Ganguly scored 99 each.

Also, as none of them scored more than 99 and the total runs scored by them is 240; their individual scores must be around 80.

Now, use trial-n-error method to solve the teaser.

=====

Brain Teaser No : 00196

Veeru says to Jay, "Can you figure out how many Eggs I have in my bucket?" He gives 3 clues to Jay: If the number of Eggs I have

1. is a multiple of 5, it is a number between 1 and 19

2. is not a multiple of 8, it is a number between 20 and 29

3. is not a multiple of 10, it is a number between 30 and 39

How many Eggs does Veeru have in his bucket?

Answer

32 eggs

Let's apply all 3 condition separately and put all possible numbers together.

First condition says that if multiple of 5, then the number is between 1 and 19. Hence, the possible numbers are (5, 10, 15, 20, 25, 30)

Second condition says that if not a multiple of 8, then the number is between 20 and 29. Hence, the possible numbers are (20, 21, 22, 23, 24, 25, 26, 27, 28, 29)

Third condition says that if not a multiple of 10, then the number is between 30 and 39. Hence, the possible numbers are (30, 31, 32, 33, 34, 35, 36, 37, 38, 39)

Only number 32 is there in all 3 result sets. That means that only number 32 satisfies all three conditions. Hence, Veeru have 32 eggs in his bucket.

=====

Brain Teaser No : 00222

Consider a chessboard with a single Rook. A Rook can move any number of square sideways/forward, but not diagonally.

What is the minimum number of moves the Rook needs to make, in order to pass over all the squares on the chessboard and return to the original position?

Note: Take any square as a starting position for the Rook.

Answer

16 moves

As a Rook can move any number of square sideways/forward, but not diagonally and there are 8 rows and 8 columns on the chessboard; the Rook needs minimum 16 moves to pass over all the squares and return to the original position.

=====

Brain Teaser No : 00295

For a TV talk show on Bollywood, the producer must choose a group of two Directors and two Musicians. At least one of them must be an Actor and at least one a Singer.

1. Available Directors are Mahesh Bhatt, Karan Johar, Subhash Ghai, Aditya Chopra and Ashutosh.
2. Available Musicians are A R Rehman, Annu Malik, Sandeep Chowta and Aadesh Srivastava.
3. Shubash Ghai, A R Rehman and Annu Malik are Actors.
4. Aditya Chopra and Aadesh Srivastava are Singers.
5. A R Rehman will not seat in the same room with Subhash Ghai, and will take part only if Mahesh Bhatt is there.
6. Aditya Chopra refuses to take part with Annu Malik.
7. Ashutosh refuses to take part with Aadesh Srivastava.

How many acceptable groups can the producer put together?

Answer

The producer can put 9 acceptable groups together.

Your basic solution step is to make a table of the possible persons and qualifications on the Musicians side, with the possible combinations on the Directors side.

Note that A R Rehman insists on Mahesh Bhatt being present, but the reverse is not true. Also, remember that there must be at least one actor and at least one singer. The valid combinations are:

Musician	Director

(A R Rehman, Sandeep Chowta)	(Mahesh Bhatt, Aditya Chopra)
(A R Rehman, Aadesh Srivastava)	(Mahesh Bhatt, Karan Johar)
(Annu Malik, Aadesh Srivastava)	(Mahesh Bhatt, Aditya Chopra)
(Sandeep Chowta, Aadesh Srivastava)	(Mahesh Bhatt, Karan Johar)
	(Mahesh Bhatt, Subhash Ghai)
	(Karan Johar, Subhash Ghai)
	(Mahesh Bhatt, Subhash Ghai)
	(Karan Johar, Subhash Ghai)
	(Aditya Chopra, Subhash Ghai)

Thus, there are total 9 acceptable groups.

=====

Brain Teaser No : 00570

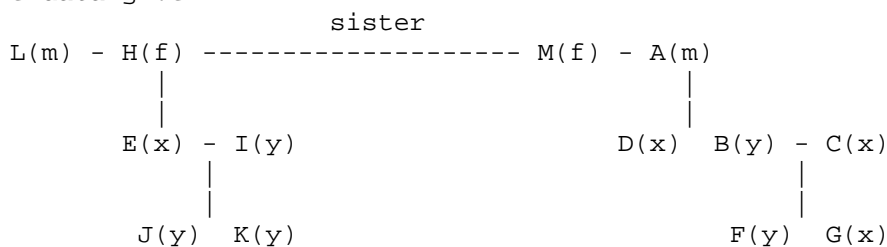
- * A is the father of two children - B and D who are of different sexes.
- * C is B's spouse.
- * E is the same sex as D.
- * B and C have the two children - F who is the same sex as B and G who is the same sex as C.
- * E's mother, H who is married to L, is the sister of D's mother, M.
- * E and E's spouse, I have two children - J and K who are the same sex as I.

Note that no persons have married more than once. Also, there are more number of females than males. Can you tell how many females are there?

Answer

There are 7 females and 6 males.

Assume that there are four sexes - male, female, X and Y. Prepare the following tree based on the data given :



It is clear that there are altogether 13 persons - 2 males, 2 females, 4 Xs and 5 Ys. It is given that there are more number of females than male. Hence, all Y must represent female. Thus, there are 7 females and 6 males.

=====

Brain Teaser No : 00614

Place the numbers from 1 to 15 in the blocks below, without repeating any of them, such a way that the sum of the numbers in any two adjacent blocks is always a perfect square.

[] [] [] [] [] [] [] [] [] [] [] [] [] [] []

A whole number is said to be a perfect square if it is equal to some whole number multiplied by itself. e.g. 36 (6*6), 121 (11*11)

Answer

[9] [7] [2] [14] [11] [5] [4] [12] [13] [3] [6] [10] [15] [1] [8]

Find out all the possible pairs of the numbers from 1 to 15 that sum up to a perfect square.

- 1: (1,3), (1,8), (1,15)
- 2: (2,7), (2,14)
- 3: (3,6), (3,13)
- 4: (4,5), (4,12)
- 5: (5,4), (5,11)
- 6: (6,3), (6,10)
- 7: (7,2), (7,9)
- 8: (8,1)
- 9: (9,7)
- 10: (10,6), (10,15)
- 11: (11,5), (11,14)
- 12: (12,4), (12,13)
- 13: (13,3), (13,12)
- 14: (14,2), (14,11)
- 15: (15,1), (15,10)

Note that there are 2 numbers that with just a one pair i.e. (8,1) and (9,7). Thus, 8 and 9 must be at the end.

[9] [7] [] [] [] [] [] [] [] [] [] [] [] [1] [8]

Now, 7 have only one other pair i.e. (7,2)

[9] [7] [2] [] [] [] [] [] [] [] [] [] [] [1] [8]

Similarly, there is only one other pair of 2 i.e. (2,14)

[9] [7] [2] [14] [] [] [] [] [] [] [] [] [] [1] [8]

Following the same procedure, the final solution is

[9] [7] [2] [14] [11] [5] [4] [12] [13] [3] [6] [10] [15] [1] [8]

=====

Brain Teaser No : 00311

Replace the letters with the correct numbers.

T W O
X T W O

T H R E E
Submitted by : Timmy Chan

Answer

T=1, W=3, O=8, H=9, R=2, E=4

	1	3	8
x	1	3	8

	1	9	0
	4	4	

Let Waldo start with W, Molly with M, and Spike with S. Following the above account we get the following progression of money:

$$W = 2*W, M = M-W$$

$$M = 2*(M-W), S = S-(M-W) = S+W-M$$

$$S = 2*(S+W-M), W = 2*W-(S+W-M) = W+M-S$$

And so Waldo finished with $W+M-S$, Molly with $2*(M-W)$, and Spike with $2*(S+W-M)$.

Since these must all be equal, we have three equations and three unknowns, so solve; this gives us that $4*M = 5*S$ and $3*S = 4*W$.

Now, if $S = 1/2$ this implies that $W = 3/8 = 37.5$ cents, an impossible amount of money to start with.

If $W = 1/2$ this implies that $S = 2/3$, again an impossible amount to start with.

Finally, if $M = 1/2$ this implies that $S = 2/5 = 40$ cents, $W = 3/10 = 30$ cents, which works. It follows that I am Molly.

=====

Brain Teaser No : 00210

There are 10 cups placed on a table such that 3 are face up and 7 are bottom up. A move is defined as inverting a pair (compulsorily) of cups.

What is the minimum number of moves required to make all the cups face the same way?

Answer

It is not at all possible. There is no way that one can do that with given Move.

A move is defined as inverting a pair of cups, compulsorily. Also, there are odd number of cups face up (3) and odd number of cups bottom up (7). Now whenever you make a move you have to invert 2 cups compulsorily. Hence, always odd number of cups will be face up and bottom up, whatever move you make.

=====

Brain Teaser No : 00366

There are three bulbs on 19th floor and there are three switches X, Y and Z on the ground floor. Each switch belongs to one bulb, not necessarily in order. You can switch on or off as many times you want but you can go on 19th floor only once.

How will you find out which switch belongs to which bulb? Note that you are the only person over there. You can't go outside and can't use any tools.

Answer

The bulb becomes hot, if you keep it on for some time. This is the characteristics of the bulb and we can use it to solve the teaser.

Switch on the switch X and wait for some time say 10 minutes, then switch it off. Now switch on the switch Y and go up to the 19th floor and check the bulbs.

The bulb which is hot but not lit corresponds to switch X.

The bulb which is lit corresponds to switch Y.

The third bulb which is not lit and is cold corresponds to switch Z.

=====

Brain Teaser No : 00650

Laloo, Baloo and Naloo were at the Health Club on the same day this month.

1. They all joined the health club last month.
2. One of them goes every 2 days, another one goes every 3 days and the third one goes every 7 days.
3. Laloo went to the health club for the first time this month on a Monday, Baloo went to the health club for the first time this month on a Wednesday and Naloo went to the health club for the first time this month on a Friday.
4. Exactly one of them was at the health club on the first day of this month.

On which day of this month did Laloo, Baloo and Naloo meet?

Note that here "this month" means any one month in general.

Answer

They met on the 27th of this month.

Find out individual dates on which they were at the club.

From (2), 2-day man went to the health club for the first time this month on the 1st or 2nd. Also, 3-day man went to the health club for the first time this month on the 1st, 2nd or 3rd. There are two possible cases:

Case I :

Laloo went on Monday, the 1st and every two days thereafter. Baloo went on Wednesday, the 3rd and every three days thereafter. Naloo went on Friday, the 5th and every seven days thereafter. Then,

Laloo's dates - 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31

Baloo's dates - 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

Naloo's dates - 5, 12, 19, 26

Case II :

Baloo went on Wednesday, the 1st and every two days thereafter. Naloo went on Friday, the 3rd and every three days thereafter. Laloo went on Monday, the 6th and every seven days thereafter. Then,

Baloo's dates - 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31

Naloo's dates - 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

Laloo's dates - 6, 13, 20, 27

It is given that they were at the club on the same day this month, then Case I is not possible. And from Case II, they met on the 27th of this month.

=====

Brain Teaser No : 00053

A man is going to an Antique Car auction. All purchases must be paid for in cash. He goes to the bank and draws out \$25,000.

Since the man does not want to be seen carrying that much money, he places it in 15 envelopes numbered 1 through 15. Each envelope contains the least number of bills possible of any available US currency (i.e. no two tens in place of a twenty).

At the auction he makes a successful bid of \$8322 for a car. He hands the auctioneer envelopes number(s) 2, 8, and 14. After opening the envelopes the auctioneer finds exactly the right amount.

How many ones did the auctioneer find in the envelopes?

Answer

Each envelope contains the money equal to the 2 raised to the envelope number minus 1. The sentence "Each envelope contains the least number of bills possible of any available US currency" is only to misguide you. This is always possible for any amount !!!

One more thing to notice here is that the man must have placed money in envelopes in such a way that if he bids for any amount less than \$25000, he should be able to pick them in terms of envelopes.

First envelope contains, $2^0 = \$1$

Second envelope contains, $2^1 = \$2$

Third envelope contains, $2^2 = \$4$

Fourth envelope contains, $2^3 = \$8$ and so on...

Hence the amount in envelopes are \$1, \$2, \$4, \$8, \$16, \$32, \$64, \$128, \$256, \$512, \$1024, \$2048, \$4096, \$8192, \$8617

Last envelope (No. 15) contains only \$8617 as total amount is only \$25000.

Now as he bids for \$8322 and gives envelope number 2, 8 and 14 which contains \$2, \$128 and \$8192 respectively.

Envelope No 2 contains one \$2 bill

Envelope No 8 contains one \$100 bill, one \$20 bill, one \$5 bill, one \$2 bill and one \$1 bill

Envelope No 14 contains eighty-one \$100 bill, one \$50 bill, four \$10 bill and one \$2 bill

Hence the auctioneer will find one \$1 bill in the envelopes.

Brain Teaser No : 00856

Find the least number which when divided by 35, leaves remainder 25; when divided by 45, leaves remainder 35 and when divided by 55, leaves remainder 45.

Answer

3455

The answer is LCM of (35, 45, 55) minus 10.

LCM of (35, 45, 55) is 3465.

Hence, the answer is 3455.

=====

Brain Teaser No : 00094

There are 3 ants at 3 corners of a triangle, they randomly start moving towards another corner.

What is the probability that they don't collide?

Answer

Let's mark the corners of the triangle as A,B,C. There are total 8 ways in which ants can move.

1. A->B, B->C, C->A
2. A->B, B->C, C->B
3. A->B, B->A, C->A
4. A->B, B->A, C->B
5. A->C, C->B, B->A
6. A->C, C->B, B->C
7. A->C, C->A, B->A
8. A->C, C->A, B->C

Out of which, there are only two cases under which the ants won't collide :

* A->B, B->C, C->A

* A->C, C->B, B->A

Therefore, probability of ants not colliding : $2/8 = 1/4$

=====

Brain Teaser No : 00116

Complete the series :

5, 20, 24, 6, 2, 8, ?

Answer

12

Note the sequence of operations:

$$5 * 4 = 20$$

$$20 + 4 = 24$$

$$24 / 4 = 6$$

$$6 - 4 = 2$$

$$2 * 4 = 8$$

There is arithmetic operation on the current number to get next number in the series. The sequence of operations is *, +, / and - by 4.

So after multiplying by 4, next operation is addition of 4. So the next number is $8 + 4 =$

12

=====

Brain Teaser No : 00219

The floor area of Milan's house is 1007 square feet. The space diagonal of the house is 59.75 feet.

What will be the height of the house? Note that floor is rectangle in shape. Also, length and width are integer.

Answer

20 feet

The floor area is 1007 square feet. The only possible floor dimension is 19 by 53. Thus the floor diagonal is 56.3 feet.

The space diagonal is 59.75 feet which makes right-angled triangle with floor diagonal and height. Hence, the height of the house is 20 feet.

=====

Brain Teaser No : 00456

B, J and P are related to each other.

1. Among the three are B's legal spouse, J's sibling and P's sister-in-law.
2. B's legal spouse and J's sibling are of the same sex.

Who is the married man?

Answer

J is the married man.

Note that a person's sister-in-law may be the wife of that person's brother or the sister of that person's spouse.

There are 2 cases:

1. If B's legal spouse is J, then J's sibling must be P and P's sister-in-law must be B.
2. If B's legal spouse is P, then P's sister-in-law must be J and J's sibling must be B.

It is given that B's legal spouse and J's sibling are of the same sex. Also, it is obvious that P's sister-in-law is female. Then, B's legal spouse and J's sibling both must be males.

	B's spouse (male)	J's sibling (male)	P's sister-in-law (female)
Case I	J	P	B
Case II	P	B	J

Case II is not possible as B & P are married to each other and both are male. Hence, J is the married man.

=====

Brain Teaser No : 00506

What is the last digit of 746? In other words, what will the remainder be, if 746 is divided by 10?

Don't try to solve this on calculator, you may get the wrong answer. Also, do explain your answer.

Answer

The last digit of 746 is 9.

The powers of any number have a repeating pattern for the last digit. It can be found easily without performing the entire multiplication of each power.

Let's consider the powers of 7.

	7 ^N Value	Last Digit
70	1	1

71 7 7
72 49 9
73 343 3
74 2401 1
75 16807 1
76 117649 1

Note that there is a repeating pattern of four numbers (1, 7, 9, 3) for the powers of 7. Hence, the last digit of 744 will be 1, of 745 will be 7 and of 746 will be 9.

Also, there is no need to actually perform the entire multiplication. Start with 1, multiply it by 7, discard all digits except units and multiply again by 7 and so on.

=====

Brain Teaser No : 00259

What is the smallest number which when divided by 10 leaves a remainder of 9, when divided by 9 leaves a remainder of 8, when divided by 8 leaves a remainder of 7, when divided by 7 leaves a remainder of 6 and so on until when divided by 2 leaves a remainder of 1?

Answer

The smallest such number is 2519.

The easiest way is to find the Least Common Multiple (LCM) of 2, 3, 4, 5, 6, 7, 8 and 9. And subtract 1 from it.

The LCM of 2, 3, 4, 5, 6, 7, 8 and 9 is given by 2520. Hence, the required number is 2519.

=====

Brain Teaser No : 00262

What TWO number will come next in the series :

6, -1, 7, -2, 8, -3, 9, -4, 10, -5, _, _

Submitted by : David

Answer

11 and -6

The pattern is : odd numbers are counting up from 6 and even numbers are counting down from -1.

The other way is : 6-7+8-9+10-11+12-13+14-15+16-17 and so on.

=====

Brain Teaser No : 00392

The cricket match between India and Pakistan was over.

* Harbhajan scored more runs than Ganguly.

* Sachin scored more runs than Laxman but less than Dravid

* Badani scored as much runs as Agarkar but less than Dravid and more than Sachin.

* Ganguly scored more runs than either Agarkar or Dravid.

Each batsman scored 10 runs more than his immediate batsman. The lowest score was 10 runs. How much did each one of them score?

Answer

A simple one. Use the given facts and put down all the players in order. The order is as follow with Harbhajan, the highest scorer and Laxman, the lowest scorer.

1. Harbhajan
2. Ganguly
3. Dravid
4. Badani, Agarkar
5. Sachin

6. Laxman

Also, as the lowest score was 10 runs. Laxman must have scored 10, Sachin 20, Badani & Agarkar 30 and so on.

1. Harbhajan - 60 runs
2. Ganguly - 50 runs
3. Dravid - 40 runs
4. Badani, Agarkar - 30 runs each
5. Sachin - 20 runs
6. Laxman - 10 runs

=====

Brain Teaser No : 00025

What is the remainder left after dividing $1! + 2! + 3! + \dots + 100!$ By 7?
Think carefully !!!

Answer

A tricky one.

7! onwards all terms are divisible by 7 as 7 is one of the factor. So there is no remainder left for those terms i.e. remainder left after dividing $7! + 8! + 9! + \dots + 100!$ is 0.

The only part to be consider is

$$= 1! + 2! + 3! + 4! + 5! + 6!$$

$$= 1 + 2 + 6 + 24 + 120 + 720$$

$$= 873$$

The remainder left after dividing 873 by 7 is 5

Hence, the remainder is 5.

=====

Brain Teaser No : 00182

Subhash is 14 inches taller than Jatin. The difference between Subhash and Sanjeev is two inches less than between Sanjeev and Jatin. Subhash at 6'6" is the tallest.

How tall are Sanjeev and Jatin?

Answer

Sanjeev is 6' and Jatin is 5'4"

It is given that Subhash at 6'6" is the tallest and also he is 14 inches taller than Jatin. It means that Jatin is 5'4".

Now as the difference between Subhash and Sanjeev is two inches less than between Sanjeev and Jatin, Sanjeev's height is more than Jatin's. And that is 6'.

Thus, Sanjeev is 6' and Jatin is 5'4".

=====

Brain Teaser No : 00229

Difference between Bholu's and Molu's age is 2 years and the difference between Molu's and Kolu's age is 5 years.

What is the maximum possible value of the sum of the difference in their ages, taken two at a time?

Submitted by : Cake

Answer

The maximum possible value of the sum of the difference in their ages - taken two at a time - is 14 years.

It is given that -

"Difference between Bholu's and Molu's age is 2 years"

"Difference between Molu's and Kolu's age is 5 years"

Now, to get the maximum possible value, the difference between Bholu's and Kolu's age should be maximum i.e. Molu's age should be in between Bholu's and Kolu's age. Then, the difference between Bholu's and Kolu's age is 7 years.
Hence, the maximum possible value of the sum of the difference in their ages - taken two at a time - is $(2 + 5 + 7)$ 14 years.

=====

Brain Teaser No : 00574

Major Jasbir is forming five-person Special Task Group. The group must contain one leader, two bomb-experts and two soldiers.

P, Q and R are possible bomb-experts. R, S and T are possible leaders. U, V and W are possible soldiers. Also, P and R prefers to work with each other in the same team. T prefers to work only if V works.

How many different possible Groups, Major Jasbir can make?

Answer

Major Jasbir can make 8 different possible groups.

As 2 bomb-experts to be selected from the given 3 and also P & R prefers to work together, PR must be there in all the possible Groups. Also, T prefers to work only if V works. It doesn't mean that V won't work without T.

Hence, possible groups are:

PR - S - UV

PR - S - VW

PR - S - WU

PR - T - UV

PR - T - VW

PQ - R - UV

PQ - R - VW

PQ - R - WU

Hence, there 8 different groups are possible.

=====

Brain Teaser No : 00630

In a school, main-computer password changes after every hour based on set of words chosen for each day. The following is the set of passwords for a particular day.

9AM-1st Password: is not ready cloth brain bath simple

10AM-2nd Password: ready not is cloth simple bath brain

11AM-3rd Password: cloth is not ready brain bath simple

12PM-4th Password: not is cloth ready simple bath brain

1PM-5th Password: ready cloth is not brain bath simple

Following the same rule, what will the 6th Password, if the 1st password is "Shy Shelly Says She Shall Sew Sheets"?

Answer

The 6th Password will be "Shy She Says Shelly Sheets Sew Shall".

The pattern is - In the first step, the first three and the last three words are written in a reverse order. Then, the first four and the last three words are written in a reverse order. The process is repeated to obtain successive passwords.

9AM - 1st Password: Shy Shelly Says She Shall Sew Sheets

10AM - 2nd Password: Says Shelly Shy She Sheets Sew Shall

11AM - 3rd Password: She Shy Shelly Says Shall Sew Sheets

12PM - 4th Password: Shelly Shy She Says Sheets Sew Shall

1PM - 5th Password: Says She Shy Shelly Shall Sew Sheets

2PM - 6th Password: Shy She Says Shelly Sheets Sew Shall

=====

Brain Teaser No : 00655

Substitute digits for the letters to make the following addition problem true.

```

      T H A T S
        T H E
+   T H E O R Y
-----
      A N Y W A Y

```

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter Y, no other letter can be 3 and all other Y in the puzzle must be 3.

Answer

T=8, H=6, A=9, S=7, E=3, O=2, R=4, Y=1, N=5, W=0

Its tough one and requires lots of trial-n-error. But it can be reduce from the following deductions:

A = T + 1, T < 9 and A > 1
S + E = 10
H + R = 10
one of (O, Y, N, W) is 0
H > 1

There are 8 possible values for (A,T) - (2,3), (3,4), (4,5), (5,6), (6,7), (7,8), (8,9)
Also, there are 4 possible value pairs for (S,E) and (H,R) - (1,9), (2,8), (3,7), (4,6),
but not necessarily in the same order.
Now, taking possible values of (A,T) one at a time and evaluating corresponding (S,E) and (H,R) values, we can find the answer.

```

      T H A T S           8 6 9 8 7
        T H E             8 6 3
+   T H E O R Y       +   8 6 3 2 4 1
-----
      A N Y W A Y           9 5 1 0 9 1

```

=====

Brain Teaser No : 00242

There is a shortage of tubelights, bulbs and fans in a village - Kharghar. It is found that

- * All houses do not have either tubelight or bulb or fan.
- * exactly 19% of houses do not have just one of these.
- * atleast 67% of houses do not have tubelights.
- * atleast 83% of houses do not have bulbs.
- * atleast 73% of houses do not have fans.

What percentage of houses do not have tubelight, bulb and fan?

Answer

42% houses do not have tubelight, bulb and fan.
Let's assume that there are 100 houses. Hence, there should be total 300 items i.e. 100 tubelights, 100 bulbs and 100 fans.
From the given data, we know that there is shortage of atleast (67+83+73) 223 items in every 100 houses.
Also, exactly 19 houses do not have just one item. It means that remaining 81 houses should account for the shortage of remaining (223-19) 204 items. If those remaining 81 houses do not have 2 items each, there would be a shortage of 162 items. But total of 204 items are short. Hence, atleast (204-162) 42 houses do not have all 3 items - tubelight, bulb and fan.
Thus, 42% houses do not have tubelight, bulb and fan.

=====

Brain Teaser No : 00248

A series comprising of alphabets contains only seven letters. The first five letters in the given series are A, B, D, O, P

Can you find out the remaining two letters?

Answer

The remaining two letters are Q and R.

In the English Alphabet, there are only 7 uppercase letters with enclosed spaces or holes in them. They are A, B, D, O, P, Q and R.

=====

Brain Teaser No : 00255

Find next two numbers in the series:

60, 30, 20, 15, ?, ?

Answer

12 and 10

The pattern is 60 divide by the position of the number.

The first number is $60/1 = 60$

The second number is $60/2 = 30$

The third number is $60/3 = 20$

The fourth number is $60/4 = 15$

The fifth number is $60/5 = 12$

The sixth number is $60/6 = 10$

Hence the next two numbers in the series are 12 and 10.

=====

Brain Teaser No : 00324

You have just built a house. However, you may only take certain items into the house. You can take doors, but you aren't allowed any windows. You can't have, but you are allowed coffee. A book is okay, but no paper. Finally, you can take a puppy or kitten, but you can't take a dog or cat.

Give one more thing that you can/can't take, and explain why.

Submitted by : J W

Answer

Anything with double letters in spelling is allowed and without double letters is not allowed.

If you you look at the spelling of the names of the items that are allowed in the house, you will notice that they all have double letters i.e. DOOR, BOOK, PUPPY, KITTEN

So you can take items like Coffee, Balloon, Pillow.

=====

Brain Teaser No : 00620

Nicole and Sharon, together have more than 10 but fewer than 30 bodyguards. One day, one of the bodyguards, Cruz, decided to leave Nicole and join Sharon. Now both the females had the same number of bodyguards.

Eventually, Cruz rejoined Nicole. Also, Jim decided to leave Sharon and join Nicole. Now, both the females had a prime number of bodyguards.

How many bodyguards did each have now?

Answer

Nicole have 11 bodyguards and Sharon have 7 bodyguards.
 If one bodyguard is moved from one group to other, it decreases one group by one and increases other by one.
 Before Cruz joined Sharon, Nicole had two more bodyguards than Sharon. (Since Cruz's switch made the number of bodyguards of both the females equal)
 When Cruz switched back to Nicole, once again Nicole had two more bodyguards than Sharon.
 Then, Jim moved from Sharon to Nicole decreasing Sharon's bodyguards by one and increasing Nicole's bodyguards by one. Hence, Nicole had four more bodyguards than Sharon.
 It is given that together had more than 10 but fewer than 30 bodyguards. Also, at the end they both had prime number of bodyguards. The only numbers fit the given conditions are 7 and 11.
 Hence, now Nicole have 11 bodyguards and Sharon have 7 bodyguards.

=====

Brain Teaser No : 00784

The population of an island consists of two and only two types of people : the knights, who invariably tell the truth and the knaves who always lie.

One day a stanger in the island, met four inhabitants. He asked the first one whether the second was a Knight or a Knave. The reply was "Knave". Similarly, the second inhabitant said that the third was a "Knave", and the third said the same about the fourth. Now he asked the fourth inhabitant that what would the first have said about the third. The reply once again was "Knave".
 Who is the fourth inhabitant, Knight or Knave?

Answer

The fourth inhabitant is a Knave.

Take two cases.

Assume that the first inhabitant was a Knight. It means that second inhabitant was a Knave as the first was telling the truth. Similarly, the third inhabitant was a Knight as the second was lying. Inturn, the forth inhabitant was a Knave as the third was telling the truth.

Now the first and the third both are Knight. So the first would have said "Knight" for the third person. But the forth would have said "Knave" and he did. Hence, the fourth person was Knave.

Tryout second case yourself i.e. assume that the first inhabitant was a Knave.

=====

Brain Teaser No : 00085

You have 3 baskets, & each one contains exactly 4 balls, each of which is of the same size. Each ball is either red, black, white, or purple, & there is one of each color in each basket.

If you were blindfolded, & lightly shook each basket so that the balls would be randomly distributed, & then took 1 ball from each basket, what chance is there that you would have exactly 2 red balls?

Answer

There are 64 different possible outcomes, & in 9 of these, exactly 2 of the balls will be red. There is thus a slightly better than 14% chance $[(9/64)*100]$ that exactly 2 balls will be red.

A much faster way to solve the problem is to look at it this way. There are 3 scenarios where exactly 3 balls are red:

1	2	3

R	R	X
R	X	R
X	R	R

X is any ball that is not red.

There is a 4.6875% chance that each of these situations will occur.
Take the first one, for example: 25% chance the first ball is red, multiplied by a 25% chance the second ball is red, multiplied by a 75% chance the third ball is not red.
Because there are 3 scenarios where this outcome occurs, you multiply the 4.6875% chance of any one occurring by 3, & you get 14.0625%

=====

Brain Teaser No : 00197

There are 70 employees working with BrainVista of which 30 are females. Also,
* 30 employees are married
* 24 employees are above 25 years of age
* 19 married employees are above 25 years, of which 7 are males
* 12 males are above 25 years of age
* 15 males are married.

How many unmarried females are there and how many of them are above 25?

Answer

15 unmarried females & none are above 25 years of age.
Simply put all given information into the table structure and you will get the answer.

	Married	Unmarried	Below 25	Above 25	Below 25	Above 25
Female	3	12	15	0		
Male	8	7	20	5		

=====

Brain Teaser No : 00370

You have 14 apples. Your Friend Marge takes away 3 and gives you 2. You drop 7 but pick up 4. Bret takes 4 and gives 5. You take one from Marge and give it to Bret in exchange for 3 more. You give those 3 to Marge and she gives you an apple and an orange. Frank comes and takes the apple Marge gave you and gives you a pear. You give the pear to Bret in exchange for an apple. Frank then takes an apple from Marge, gives it to Bret for an orange, gives you the orange for an apple.

How many pears do you have?
Submitted by : Big Mike

Answer

None
Frank gave you a pear in exchange of the apple which Marge gave you. And you gave that pear to Bret in exchange for an apple. All the others exchanges involved apples and/or oranges.

=====

Brain Teaser No : 00403

There are N secret agents each know a different piece of secret information. They can telephone each other and exchange all the information they know. After the telephone call, they both know anything that either of them knew before the call.
What are the minimum number of telephone calls needed so that all of the them know everything?

Answer

(2N - 3) telephone calls, for N = 2,3
(2N - 4) telephone calls, for N > 3

Divide the N secret agents into two groups. If N is odd, one group will contain one extra agent.

Consider first group: agent 1 will call up agent 2, agent 2 will call up agent 3 and so on. Similarly in second group, agent 1 will call up agent 2, agent 2 will call up agent 3 and so on. After $(N - 2)$ calls, two agents in each the group will know anything that anyone knew in his group, say they are Y1 & Y2 from group 1 and Z1 & Z2 from group 2.

Now, Y1 will call up Z1 and Y2 will call up Z2. Hence, in next two calls total of 4 agents will know everything.

Now $(N - 4)$ telephone calls are required for remaining $(N - 4)$ secret agents.

Total telephone calls require are

$$= (N - 2) + 2 + (N - 4)$$

$$= 2N - 4$$

Let's take an example. Say there are 4 secret agents W, X, Y & Z. Divide them into two groups of 2 each i.e. (W, X) and (Y, Z). Here, 4 telephone calls are required.

1. W will call up X.
2. Y will call up Z.
3. W, who knows WX will call up Y, who knows YZ.
4. X, who knows WX will call up Z, who knows YZ.

Take an another example. Say there are 5 secret agents J, K, L, M & N. Divide them into two groups i.e. (J, K) and (L, M, N). Here, 6 telephone calls are required.

1. J will call up K.
2. L will call up M.
3. M will call up N. Now M and N know LMN.
4. J, who knows JK will call up M, who knows LMN.
5. K, who knows JK will call up N, who knows LMN.
6. L will call up to anyone of four.

=====

Brain Teaser No : 00450

Yesterday in a party, I asked Mr. Shah his birthday. With a mischievous glint in his eyes he replied. "The day before yesterday I was 83 years old and next year I will be 86." Can you figure out what is the Date of Birth of Mr. Shah? Assume that the current year is 2000.

Answer

Mr. Shah's date of birth is 31 December, 1915

Today is 1 January, 2000. The day before yesterday was 30 December, 1999 and Mr. Shah was 83 on that day. Today i.e. 1 January, 2000 - he is 84. On 31 December 2000, he will be 85 and next year i.e. 31 December, 2001 - he will be 86. Hence, the date of birth is 31 December, 1915.

Many people do think of Leap year and date of birth as 29th February as 2000 is the Leap year and there is difference of 3 years in Mr. Shah's age. But that is not the answer.

=====

Brain Teaser No : 00559

If you were to dial any 7 digits on a telephone in random order, what is the probability that you will dial your own phone number?

Assume that your telephone number is 7-digits.

Submitted by : Alessandro Tabora

Answer

1 in 10,000,000

There are 10 digits i.e. 0-9. First digit can be dialed in 10 ways. Second digit can be dialed in 10 ways. Third digit can be dialed in 10 ways. And so on.....

Thus, 7-digit can be dialed in $10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$ (=10,000,000) ways. And, you have just one telephone number. Hence, the possibility that you will dial your own number is 1 in 10,000,000.

Note that 0123456 may not be a valid 7-digit telephone number. But while dialing in random order, that is one of the possible 7-digit number which you may dial.

=====

Brain Teaser No : 00200

An apple vendor has 1000 apples and 10 empty boxes. He asks his son to place all the 1000 apples in all the 10 boxes in such a manner that if he asks for any number of apples from 1 to 1000, his son should be able to pick them in terms of boxes.

How did the son place all the apples among the 10 boxes, given that any number of apples can be put in one box.

Answer

1, 2, 4, 8, 16, 32, 64, 128, 256, 489

Let's start from scratch.

* The apple vendor can ask for only 1 apple, so one box must contain 1 apple.

* He can ask for 2 apples, so one box must contain 2 apples.

He can ask for 3 apples, in that case box one and box two will add up to 3.

* He can ask for 4 apples, so one box i.e. third box must contain 4 apples.

* Now using box number one, two and three containing 1, 2 and 4 apples respectively, his son can give upto 7 apples. Hence, fourth box must contain 8 apples.

* Similarly, using first four boxes containing 1, 2, 4 and 8 apples, his son can give upto 15 apples. Hence fifth box must contain 16 apples.

* You must have noticed one thing till now that each box till now contains power of 2 apples. Hence the answer is 1, 2, 4, 8, 16, 32, 64, 128, 256, 489. This is true for any number of apples, here in our case only upto 1000.

=====

Brain Teaser No : 00170

A series comprising of alphabets contains 13 letters. The first seven letters in the given series are A, E, F, H, I, L, M

Can you find the next two letters?

Answer

The next letters in the series are N, O, R, S, U, X.

The pattern is - letters whose English names (Phonetic Pronunciations) start with vowels.

=====

Brain Teaser No : 00271

Substitute digits for the letters to make the following Division true

```

      O U T
    -----
S T E M | D E M I S E
        | D M O C
    -----
          T U I S
          S T E M
    -----
          Z Z Z E
          Z U M M
    -----
          I S T
```


$$2 + 3 + 6 = 11$$

$$2 + 4 + 8 = 14$$

$$3 + 3 + 9 = 15$$

11 is the Prime number. Hence, the required combination is 2, 3 and 6. The eldest son is 6 years old.

=====

Brain Teaser No : 00754

Mark ate half of a pizza on Monday. He ate half of what was left on Tuesday and so on. He followed this pattern for one week.

How much of the pizza would he have eaten during the week?

Submitted by : Ashley Krapf

Answer

Mark would have ate 127/128 (99.22%) of the pizza during the week.

Mark ate half the pizza on Monday. On Tuesday, he would have ate half of the remaining pizza i.e. 1/4 of the original pizza. Similarly, he would have ate 1/8 of the original pizza on Wednesday and so on for the seven days.

Total pizza Mark ate during the week is

$$= 1/2 + 1/4 + 1/8 + 1/16 + 1/32 + 1/64 + 1/128$$

$$= 127/128$$

$$= 99.22\% \text{ of the original pizza}$$

=====

Brain Teaser No : 00087

Find the next number in the series 11 12 20 23 33 46

Answer

All the numbers given are the fibonacci numbers in increasing bases starting 2 !!!

Therefore,

$$11 = 3 \text{ base } 2$$

$$12 = 5 \text{ base } 3$$

$$20 = 8 \text{ base } 4$$

$$23 = 13 \text{ base } 5 \text{ etc } \dots$$

Answer = 67 which is 55 base 8

(Fibonacci series : 2, 3, 5, 8, 13, 21, 34, 55, 89..... where next number is sum of the previous to numbers.)

=====

Brain Teaser No : 00108

Substitute digits for the letters to make the following relation true.

$$\begin{array}{r} \text{S O M E} \\ + \text{G O O D} \\ \hline \text{I D E A S} \end{array}$$

Note that the leftmost letter can't be zero in any word. Also, there must be a one-to-one mapping between digits and letters. e.g. if you substitute 3 for the letter S, no other letter can be 3 and all other S in the puzzle must be 3.

Answer

By just looking at the teaser, one can guess that I must be 1.

Now, take the right side of the teaser i.e. $E + D = S$ and take the left side of the teaser i.e. $S + G = D$. Here note that $S + G$ should be greater than 11 as E or D can not be 0 ($E + D = S$) and I is 1.

With trial and error, and also by applying such constraints, we get

$$\begin{array}{r} 8795 \\ + 4773 \\ \hline 13568 \end{array}$$

=====

Brain Teaser No : 00117

I bought a car with a peculiar 5 digit numbered licence plate which on reversing could still be read. On reversing value is increased by 78633.

Whats the original number if all digits are different?

Answer

Only 0 1 6 8 and 9 can be read upside down. So on rearranging these digits we get the answer as 10968.

=====

Brain Teaser No : 00120

Replace each letter by a digit. Each letter must be represented by the same digit and no beginning letter of a word can be 0.

$$\begin{array}{r} O N E \\ O N E \\ O N E \\ + O N E \\ \hline T E N \end{array}$$

Answer

Use trial and error. 0 =1, N = 8 ,E = 2, T = 7

$$\begin{array}{r} 182 \\ 182 \\ 182 \\ + 182 \\ \hline 728 \end{array}$$

=====

Brain Teaser No : 00471

SlowRun Express runs between Bangalore and Mumbai, For the up as well as the down journey, the train leaves the starting station at 10:00 PM everyday and reaches the destination at 11:30 PM after three days.

Mr. Haani once travelled by SlowRun Express from Mumbai to Bangalore. How many SlowRun Express did he cross during his journey?

Answer

Mr. Haani crossed 7 SlowRun Expresses during his journey.

Let's say that Mr. Haani travelled by Slow Express on Wednesday 10:00PM from Mumbai. The first train he would have crossed is the one scheduled to arrive at Mumbai at 11:30 PM the same day i.e. the one that left Bangalore at 10:00 PM on last Sunday.

Also, he would have crossed the last train just before reaching Bangalore on Saturday.

Thus, Mr. Haani must have crossed 7 SlowRun Expresses during his journey.

=====

Brain Teaser No : 00039

Find next number in the series :

3, 7, 31, 211, ?

Answer

1831

All the numbers in the series are Prime Numbers. So the next number will also be a prime number.

Two consecutive numbers in the series

(A and B) Total Prime numbers between A and B

(C) Prime number just before B

(D) $E = (C + D)$

3 and 7 1 5 6

7 and 31 6 29 35

31 and 211 35 199 234

* Number after 7 is the prime number on skipping 6 prime numbers after 7 i.e. 31

* Number after 31 is the prime number on skipping 35 prime numbers after 31 i.e. 211

* Hence, number after 211 is the prime number on skipping 234 prime numbers after 211 i.e. 1831

The other possible answer is 1891.

Subtract 1 from each number in the given series: 2, 6, 30, 210

First number = $2*1 = 2$

Second number = $2*3 = 6$

Third number = $6*5 = 30$

Fourth number = $30*7 = 210$

Fifth number = $210*9 = 1890$

Sixth number = $1890*11 = 20790$

Thus, the pattern is : multiply previous number by next odd number and add one to the multiplication. Thus, the series is 3, 7, 31, 211, 1891, 20791, ...

Thanks to N. Anand for this much more simpler answer.

=====

Brain Teaser No : 00047

The ratio of Boys to Girls is 6:4. 60% of the boys and 40% of the girls take lunch in the canteen. What % of class takes lunch in canteen?

Answer

Assume there are 6X boys and 4X Girls

Total Students taking lunch in canteen

= $(6X)(60/100) + (4X)(40/100)$

= $36(X/10) + 16(X/10)$

= $52(X/10)$

Total students are = $6X + 4X = 10X$

% of class taking lunch in canteen

= $((52X/10) * 100) / 10X$

= 52 %

=====

Brain Teaser No : 00699

Here in England McDonald's has just launched a new advertising campaign. The poster shows 8 McDonald's products and underneath claims there are 40312 combinations of the above items. Given that the maximum number of items allowed is 8, and you are allowed to have less than 8 items, and that the order of purchase does not matter (i.e. buying a burger and fries is the same as buying fries and a burger)

How many possible combinations are there? Are McDonald's correct in claiming there are 40312 combinations?

Submitted by : Alex Crosse

Answer

Total possible combinations are 12869.

It is given that you can order maximum of 8 items and you are allowed to have less than 8 items. Also, the order of purchase does not matter. Let's create a table for ordering total N items using X products.

Items

Ordered

(N) Products Used (X)

1 2 3 4 5 6 7 8

1 1 - - - - - - - -

2 1 1 - - - - - - -

3 1 2 1 - - - - - -

4 1 3 3 1 - - - - -

5 1 4 6 4 1 - - - -

6 1 5 10 10 5 1 - - -

7 1 6 15 20 15 6 1 - -

8 1 7 21 35 35 21 7 1

Total (T) 8 28 56 70 56 28 8 1

Ways to choose

X products from

8 products (W) 8C1 8C2 8C3 8C4 8C5 8C6 8C7 8C8

Total combinations

(T*W) 64 784 3136 4900 3136 784 64 1

Thus, total possible combinations are

= 64 + 784 + 3136 + 4900 + 3136 + 784 + 64 + 1

= 12869

=====

Brain Teaser No : 00003

In a hotel, rooms are numbered from 101 to 550. A room is chosen at random. What is the probability that room number starts with 1, 2 or 3 and ends with 4, 5 or 6?

Answer

There are total 450 rooms.

Out of which 299 room number starts with either 1, 2 or 3. (as room number 100 is not there) Now out of those 299 rooms only 90 room numbers end with 4, 5 or 6

So the probability is 90/450 i.e. 1/5 or 0.20

=====

Brain Teaser No : 00015

In the town called Alibaug, the following facts are true:

* No two inhabitants have exactly the same number of hairs.

* No inhabitants has exactly 2025 hairs.

* There are more inhabitants than there are hairs on the head of any one inhabitants.

What is the largest possible number of the inhabitants of Alibaug?

Answer

2025

It is given that no inhabitants have exactly 2025 hairs. Hence there are 2025 inhabitants with 0 to 2024 hairs in the head.

Suppose there are more than 2025 inhabitants. But these will violate the condition that

"There are more inhabitants than there are hairs on the head of any one inhabitants." As

for any number more than 2025, there will be same number of inhabitants as the maximum number of hairs on the head of any inhabitant.

=====

Brain Teaser No : 00035

In a sports contest there were m medals awarded on n successive days ($n > 1$).

1. On the first day 1 medal and $1/7$ of the remaining $m - 1$ medals were awarded.
2. On the second day 2 medals and $1/7$ of the now remaining medals was awarded; and so on.
3. On the n th and last day, the remaining n medals were awarded.

How many days did the contest last, and how many medals were awarded altogether?

Answer

Total 36 medals were awarded and the contest was for 6 days.

On day 1: Medals awarded = $(1 + 35/7) = 6$: Remaining 30 medals

On day 2: Medals awarded = $(2 + 28/7) = 6$: Remaining 24 medals

On day 3: Medals awarded = $(3 + 21/7) = 6$: Remaining 18 medals

On day 4: Medals awarded = $(4 + 14/7) = 6$: Remaining 12 medals

On day 5: Medals awarded = $(5 + 7/7) = 6$: Remaining 6 medals

On day 6: Medals awarded 6

I got this answer by writing small program. If anyone know any other simpler method, do submit it.

=====

Brain Teaser No : 00330

The secret agent X emailed a code word to his head office. They are "AIM DUE OAT TIE MOD". But four of these five words are fake and only one contains the information.

The agent X also mailed a sentence as a clue - if I tell you any one character of the code word, you would be able to tell the number of vowels in the code word.

Can you tell which is the code word?

Answer

The code word is TIE.

If you were told any one character of MOD, then you would not be able to determine whether the number of vowels are one or two. e.g. if you were told M, there are two words with M - AIM with 2 vowels and MOD with 1 vowel. So you would not be able to say the number of vowels. Same arguments can be given for characters O and D.

Hence, the word with any one of M, O or D is not a code word i.e. AIM, DUE, OAT and MOD are not the code word. Thus, TIE is the code word.

T : two words - TIE and OAT, both with 2 vowels

I : two words - TIE and AIM, both with 2 vowels

E : two words - TIE and DUE, both with 2 vowels.

=====

Brain Teaser No : 00520

Somebody marked the six faces of a die with the numbers 1, 2 and 3 - each number twice. The die was put on a table. Four people - Abu, Babu, Calu and Dabu - sat around the table so that each one was able to see only three sides of the die at a glance.

* Abu sees the number 1 and two even numbers.

* Babu and Calu can see three different numbers each.

* Dabu sees number 2 twice and he can't remember the third number.

What number is face down on the table?

Answer

Number 3 is face down on the table.

If Abu can see two even numbers i.e. number 2 twice, and if Dabu can see number 2 twice, then number 2 must be facing up.

Now everything else is simple. (see the following diagram)

Dabu		Abu
	1	
3	2	2
	1	
Calu		Babu

Thus, the number hidden from the view is number 3 and hence the answer.

=====

Brain Teaser No : 00291

A drinks machine offers three selections - Tea, Coffee or Random (Either tea or Coffee) but the machine has been wired up wrongly so that each button does not give what it claims. If each drink costs 50p, how much minimum money do you have to put into the machine to work out which button gives which selection?

Submitted by : Alex Crosse

Answer

You have to put just 50p.

Put 50p and push the button for Random. There are only 2 possibilities. It will give either Tea or Coffee.

* If it gives Tea, then the button named Random is for Tea. The button named Coffee is for Random selection. And the button named Tea is for Coffee.

* If it gives Coffee, then the button named Random is for Coffee. The button named Tea is for Random selection. And the button named Coffee is for Tea.

Thus, you can make out which button is for what by putting just 50p and pressing Random selection first.

=====

Brain Teaser No : 00298

Which of the following numbers is the odd one out, and why?

1, 2, 3, 5, 9, 13, 21

Note that 2 is not the odd one.

Submitted by : Brett Hurrell

Answer

The odd number is 9.

It is a Fibonacci Series - a series in which next number is summation of previous 2 numbers.

The first two numbers are 1 and 2.

Third number is $1 + 2 = 3$

Fourth number is $3 + 5 = 8$

Fifth number is $5 + 8 = 13$

Sixth number is $8 + 13 = 21$

Hence 9 is the odd number It should 8.

=====

Brain Teaser No : 00315

A farmer built a fence around his 25 cows in a square region. He built it in such a way that one can see 5 poles from either of the four sides.

What are the minimum number of poles the farmer must have used?

Answer

$$X1 - 15 = V2 * T \quad \text{----> 2}$$

$$X1 - 18 = V3 * T \quad \text{----> 3}$$

At a Distance S Km.

$$S = V1 * T1 \quad \text{----> 4}$$

$$S = V2 * (T1 + 12) \quad \text{----> 5}$$

$$S = V3 * (T1 + 15) \quad \text{----> 6}$$

Thus there are 6 equations and 7 unknown data that means it has infinite number of solutions.

By solving above 6 equations we get,

Time taken by first biker, $T1 = 60$ Min.

Time taken by Second biker, $T2 = 72$ Min.

Time taken by first biker, $T3 = 75$ Min.

Also, we get

Speed of first biker, $V1 = 90/T$ km/min

Speed of second biker, $V2 = (5/6)V1 = 75/T$ km/min

Speed of third biker, $V3 = (4/5)V1 = 72/T$ km/min

Also, the length of the course, $S = 5400/T$ km

Thus, for the data given, only the time taken by each biker can be found i.e. 60, 72 and 75 minutes. For other quantities, one more independent datum is required i.e. either T or $V1$ or $V2$ or $V3$

Thanks to Theertham Srinivas for the answer !!!

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Brain Teaser No : 00313

A group of friends went on a holiday to a hill station. It rained for 13 days. But when it rained in the morning, the afternoon was lovely. And when it rained in the afternoon, the day was preceded by clear morning.

Altogether there were 11 very nice mornings and 12 very nice afternoons. How many days did their holiday last?

Answer

The holiday last for 18 days.

Let's assume the number of days as follows:

Rain in the morning and lovely afternoon = X days

Clear morning and rain in the afternoon = Y days

No rain in the morning and in the afternoon = Z days

Number of days with rain = $X + Y = 13$ days

Number of days with clear mornings = $Y + Z = 11$ days

Number of days with clear afternoons = $X + Z = 12$ days

Solving above 3 equations, we get $X = 7$, $Y = 6$ and $Z = 5$

Hence, total number of days on holiday = 18 days