

Pattern 1:

1. $(1/2)$ of a number is 3 more than the $(1/6)$ of the same number?
a) 6 b) 7 c) 8 d) 9

Solution:

Let the number be x ,

$$((1/2)*x)=3+(1/6)*x,$$

Then solve x

2. $(1/3)$ of a number is 3 more than the $(1/6)$ of the same number?
a) 6 b) 16 c) 18 d) 21
3. $(1/3)$ of a number is 6 more than the $(1/6)$ of the same number?
a) 6 b) 18 c) 36 d) 24
4. $(2/3)$ of a number is 4 more than the $(1/6)$ of the same number?
a) 6 b) 8 c) 36 d) 24
5. $(1/3)$ of a number is 5 more than the $(1/6)$ of the same number?
a) 6 b) 36 c) 30 d) 72

Pattern 2:

1. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of 1 liter every hour in A, it gets filled up like, 10, 20, 40, 80, 160 in tank B. (At the end of first hour, B has 10 liters, second hour it has 20 liters and so on). If tank B is $1/32$ filled of the 21 hours, what is total duration of hours required to fill it completely?
a) 26 B) 25 c) 5 d) 27

Solution: for every hour water in tank in B is doubled,

Let the duration to fill the tank B is x hours.

$x/32$ part of water in tank of B is filled in 21 hours,

Next hour it is doubled so,

$2*(x/32)$ part i.e $(x/16)$ part is filled in 22 hours,
Similarly $(x/8)$ th part in 23 hours, $(x/4)$ th part is filled in 24 hours,

$(x/2)$ th part is filled in 25 hours, (x) th part is filled in 26 hours

So answer is 26 hours.

2. There are two pipes A and B. If A filled 10 liters in an hour, B can fill 20 liters in same time. Likewise B can fill 10, 20, 40, 80, 160. If B filled in $\frac{1}{16}$ of a tank in 3 hours, how much time will it take to fill the tank completely?

a) 9 B) 8 c) 7 d) 6

3. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of 1 liter every hour in A, it gets filled up like, 10, 20, 40, 80, 160.....in tank B. $\frac{1}{8}$ th of the tank B is filled in 22 hours. What is the time to fill the tank fully?

a) 26 B) 25 c) 5 d) 27

4. A tank is filled with water. In first hour 10 liters, second hours 20 liters, and third hour 40 liters and so on. If time taken to fill $\frac{1}{4}$ of the tank is 5 hours. What is the time taken to fill up the tank?

a) 5 B) 8 c) 7 d) 12.5

5. If a tank A can be filled within 10 hours and tank B can be filled $\frac{1}{4}$ in 19 hours then, what is the time taken to fill up the tank completely?

a) 21 B) 38 c) 57 d) 76

Pattern 3:

1. 6 persons standing in queue with different age group, after two years their average age will be 43 and seventh person joined with them. Hence the current average age has become 45.

Find the age of seventh person?

a) 43 b) 69 c) 52 d) 31

Solution:

Total age of 6 persons is x hours, after two years total age of 6 persons is $x+12$

Average age of 6 persons is after two years is 43

So $(x+12)/6=43$, then solve x ,

After 7th person is added then $(x+7\text{th person age})/7=45$

So we will get 7th person age easily

2. In a market 4 men are standing. The average age of the four before 4 years is 45, after some days one man is added and his age is 49. What is the average age of all?

a) 43 b) 45 c) 47 d) 49

3. In a shopping mall with a staff of 5 members the average age is 45 years. After 5 years a person joined them and the average age is again 45 years. What's the age of 6th person?

a) 25 b) 20 c) 45 d) 30

4. In a market 4 men are standing. The average age of the four before 2 years is 55, after some days one man is added and his age is 45. What is the average age of all?

a) 55 b) 54.5 c) 54.6 d) 54.7

Pattern 4:

1. In the reading room of a library, there are 23 reading spots. Each reading spot consists of a round table with 9 chairs placed around it. There are some readers such that in each occupied reading spot there are different numbers of readers. If in all there are 36 readers, how many reading spots do not have even a single reader?

a) 8 b) none c) 16 d) 15

Solution: 23 reading spots, Each reading spot consists of 9 chairs placed around it so There are some readers such that in each occupied reading spot there are different numbers of readers.

For each table different no of persons are sat, so for first table 1 person is sit, 2nd table 2 persons are sit 36

readers means $(1+2+3+4+5+6+7+8)$ so 8 tables are filled so $23-8=15$ reading spots does not have single reader.

2. In the reading room of a library, there are 10 tables, 4 chairs per table. In each table there are different numbers of people seated. How many tables will be left out without at least 1 person?

a) 8 b) 6 c) 2 d) 7

3. In the reading room of a library, there are 10 tables, 4 chairs per table. In each table there are different numbers of people seated. How many ways they will sit in the library so that no chair would be blank?

a) 8 b) 6 c) 2 d) 7

Pattern 5:

1. A man jogs at 6 mph over a certain journey and walks over the same route at 4 mph. What is his average speed for the journey?

a) 2.4 mph b) 4.8 mph c) 4 mph d) 5 mph

Solution: Average speed $= \frac{2 \times x \times y}{x+y}$

2. A man travels from A to B at 4 mph over a certain journey and returns over the same route to A, at 5 mph. What is his average speed for the journey?

a) 4.44 mph b) 4.8 mph c) 4.887 mph d) 5 mph

3. A person is rock climbing at an altitude of 800 m. He goes up by 7 mph. and comes down by 9 mph. what was his average speed?
a) 7.875 mph b) 7.125 mph c) 7mph d) 7.5 mph
4. Find average speed if a man travels at speed of 24kmph up and 36kmph down at an altitude of 200m?
a) 28.8 mph b) 27.8 mph c) 27.5mph d) 30 mph
5. Person travels to a hill, if he goes from A to B with speed of 4kmph and returns back to B with speed of 5kmph. What is his average speed of journey?
a) 4.5kmph b) 4.44kmph c) 9kmph d) 4.245kmph
6. A man travels from A to B at 70 mph over a certain journey and returns over the same route to A, at 80 mph. What is his average speed for the journey?
a) 74.66 b) 75 c) 74.33 d) 74.99
7. Find average speed if a man travels at speed of 24kmph up and 36kmph down at an altitude of 200m.
a) 28.8 b) 28 c) 27 d) 28.6

Pattern 6:

1. Susan made a block with small cubes of 8 cubic cm volume to make a block, 3 small cubes long, 9 small cubes wide and 5 small cubes deep. She realizes that she has used more small cubes than she really needed. She realized that she could have glued a fewer number of cubes together to look like a block with same dimensions, if it were made hollow. What is the minimum number of cubes that she needs to make the block?
a) 114 b) 135 c) 21 d) 71

Solution: I do not know perfectly but I got some solutions from internet I do not know correctly whether it is true or not, $((3*9*5)) - ((3-2)*(9-2)*(5-2))$ so answer is 114.

2. A boy wants to make cuboids of dimension 5m, 6m and 7m from small cubes of .03 m³. Later he realized he can make same cuboids by making it hollow. Then it takes some cubes less. What is the number of the cubes to be removed?
a) 2000 b) 5000 c) 3000 d) 7000
3. Smita was making a cube with dimensions 5*5*5 using 1*1*1 cubes. What is the number of cubes needed to make a hollow cube looking of the same shape?
a) 98 b) 104 c) 100 d) 61
4. Leena cut small cubes of 10 cm dimension each. She joined it to make a cuboid of length 100 cm, width 50 cm and depth 50 cm. How many more cubes does she need to make a perfect cube?
a) 500 b) 250 c) 750 d) 650

5. Leena cut small cubes of 3 cubic cm each. She joined it to make a cuboid of length 10 cm, width 3 cm and depth 3 cm. How many more cubes does she need to make a perfect cube?

a) 910 b) 250 c) 750 d) 650

6. A lady builds 9cm length, 10cm width, 3cm height box using 1 cubic cm cubes. What is the minimum number of cubes required to build the box?

a) 730 b) 270 c) 720 d) 310

Pattern 8:

1. $(40 \times 40 \times 40 - 31 \times 31 \times 31) / (40 \times 40 + 40 \times 31 + 31 \times 31) = ?$

a) 8 b) 9 c) 71 d) 51

Solution: $a^3 - b^3 = (a-b)(a^2 + a \cdot b + b^2)$ so from this formula we will find (a-b) value

2. $(98 \times 98 \times 98 - 73 \times 73 \times 73) / (98 \times 98 + 98 \times 73 + 73 \times 73) = ?$

a) 171 b) 4 c) 420 d) 415

3. $(209 \times 144)^2 + (209 \times 209) + (209 \times 144) + (144 \times 144) = ?$

a) 905863729 b) 905368729 c) 905729368 d) 65

Pattern 9:

1. $((4x+3y) + (5x+9y)) / (5x+5y) = ?$ as $(x/2y) = 2$

a) 8 b) none c) 16 d) 15

Solution: substitute $x=4y$ in above we can find solution

2. $x/2y = 2a$, then $2x/x - 2a = ?$

a) 4 b) 8 c) 16 d) 2

3. $3X/5Y = 5Y/3X$Find the value of X/Y

a) $3/5$ b) $5/3$ c) $2/5$ d) $5/2$

4. What is the value of $(3X+8Y)/(X-2Y)$, if $X/2Y=2$

a) 8 b) none c) 10 d) 13

5. $(4x+3y) + (5x+9y)) / (5x+5y) = ?$ as $(x/2y) = 2$

a) $48/5$ b) $46/5$ c) $47/5$ d) $49/5$

6. $((4x+2y)/(4x-2y)) = ?$ as $(x/2y) = 2$

a) $8/7$ b) $9/7$ c) $11/7$ d) $6/7$

Pattern 10:

1. A girl has to make pizza with different toppings. There are 8 different toppings. In how many ways can she make pizzas with 2 different toppings?

a) 16 b) 56 c) 112 d) 28

Solution: $8c2$

2. A pizza shop made pizzas with many flavors. There are 10 different flavors, in that 7 flavors are taken to make pizza. In how many ways they can arrange?

a) 240 b) 120 c) 65 d) 210

3. A pizza shop made pizzas with many flavors. There are 9 different flavors, in that 2 flavors are taken to make pizza. In how many ways they can arrange?

a) 16 b) 26 c) 36 d) 46

Pattern 11:

1. 3, 22, 7, 45, 15, ? , 31

a) 91 b) 151 c) 90 d) 5

2. 8 6 17 14 35 31 75 _ 143?

3. Inspired by Fibonacci series Sangeet decided to create his own series which is 1, 2, 3, 7, 7, 22, 15, 67, 31, _, 63?

a) 202 b) 31 c) 76 d) 49

4. 3, 12, 7, 26, 15, ?

a) 54 b) 27 c) 108 d) 31

5. $1! + 2! + \dots + 50! = ?$

a) 3.1035×10^{64} b) 2.1021×10^{65} c) 3.1035×10^{63} d) 3.1035×10^{62}

6. 1, 2, 3, 6, 7, 14, _, 32?

7. 5, 9, 12, 18, 26, 36, 47, 72, _?

a) 75 b) 135 c) 100 d) 55

8. 3, 15, x, 51, 53, 159, 161

a) 17 b) 34 c) 54 d) 112

Pattern 12:

1. Simple question but big one on average age. sth like a, b, c weighted separately 1st a, b, c, then a & b, then b & c, then c & a at last abc, the last weight was 167, then what will be the average weight of the 7 reading?

a) 95 b) 95.428 c) 95.45 d) 94

Solution: Last weight abc is 167 i.e three persons weight is 167. in first 6 combinations a,b,c,ab,bc,ac i.e a checked weight for 3 times totally like that b and c also so total weight in all 7 combinations is (4×167)

Average is $(668/7) = 95.42$

Pattern 13:

1. A toy train produces 10 different sounds when it moves around a circular toy track of radius 5 m at 10 m per min. However, the toy train is defective and it now produces only 2 different tunes at random. What are the odds that the train produces for consecutive music tones of the same type?

a) 1 in 16 B) 1 in 4 c) 1 in 8 d) 1 in 32

Solution: Initially it produces 10 sounds and the defect came and now it produces only 2 different sounds and consecutively so there are totally 2 sounds and we have to select on sound and the probability is $\frac{1}{2}$ and it produces the same sound concecutively for 2 times so the probability becomes $\frac{1}{2} * \frac{1}{2}$ ie $\frac{1}{4}$

2. A car manufacturer produces only red and blue models which come out of the final testing area at random. What are the odds that five consecutive cars of same color will come through the test area at any one time?

a) 1 in 16 b) 1 in 125 c) 1 in 32 d) 1 in 25

Pattern 15:

1. A triangle is made from a rope. The sides of the triangle are 25 cm, 11 cm and 31 cm. What will be the area of the square made from the same rope?

a) 280.5625 b) 240.5625 c) 280.125 d) 240

Solution: add all sides $25+11+31$ to get rope length rope length =67,rope is made in to as square

So side of square is $67/4=16.75$ and so area is $16.75*16.75=280.5625$

2. A triangle is made from a rope. The sides of the triangle are 21 cm, 24 cm and 28 cm. What will be the area of the square made from the same rope?

a) 280.5625 b) 333.0625 c) 333.0125 d) 400

Pattern 16:

1. What is the distance between the z-intercept from the x-intercept in the equation $ax+by+cz+d=0$

Solution: intercept form equation

2. What is the distance of the z-intercept from the x-intercept in the equation $ax+by+cz=d$ (I do not remember the values of a, b, c, d).

Pattern 17:

1. A scientist was researching on animal behavior in his lab. He was very interested in analyzing the behavior of bear. For some reason he travelled 1 mile in north direction & reached at North Pole. There he saw a bear. He then followed the bear around 1 hr with a speed of 2km/hr in east direction. After that he travelled in south direction & reached at his lab in 2 hrs. Then what is the color of the bear?

a) White b) Black c) Gray d) Brown

Solution is: White. above all the matter is nonsense

Pattern 18:

1. Out of 7 children the youngest is boy then find the probability that all the remaining children are boys

a) $1/64$ b) $1/32$ c) $1/128$ d) $1/256$

Pattern 19:

1. Usha bought a linen cloth and rope to build a tent. If the rope is 153 m long and it is to be cut into pieces of 1m length, then how many cuts are to be made to cut the ropes into 153 pieces?

a) 153 b) 152 c) 154 d) 155

Solution: to make it 153 pieces we have to cut 152 times so obviously after last cut we got 153rd piece

2. A person has to make 146 pieces of a long bar. He takes 4 seconds to cut a piece. What is the total time taken by him in seconds to make 146 pieces?

a) 584 b) 580 c) 730 d) 725

Solution: 146 pieces means 145 cuts so for each cut it takes 4 seconds means total time $145 \times 4 = 580$

3. A person has to make 141 pieces of a long bar. He takes 2 seconds to cut a piece. What is the total time taken by him in seconds to make 141 pieces?

a) 560 b) 280 c) 112 d) 324

Pattern 20:

1. Spores of a fungus, called late blight, grow and spread infection rapidly. These pathogens were responsible for the Irish potato famine of the mid-19th century. These seem to have attacked the tomato crops in England this year. The tomato crops have reduced and the price of the crop has risen up. The price has already gone up to \$45 a box from \$27 a box a month

ago. How much more would a vegetable vendor need to pay to buy 27 boxes this month over what he would have paid last month?

a) \$27 b) \$18 c) \$45 d) \$486

Solution: See last 3 lines only answer is $45 - 27 = 18$

Pattern 21:

1. A Person buys a horse for 15 ponds, after one year he sells it for 20 pounds. After one year, again he buys the same horse at 30 pounds and sells it for 40 pounds. What is the profit for that person?

Solution: here we cannot consider depreciation or decay of item accto answer so go acc to answer

Totally $5 + 10 = 15$ \$profit

Pattern 22:

1. John buys a cycle for 31 dollars and given a cheque of amount 35 dollars. Shop Keeper exchanged the cheque with his neighbor and gave change to John. After 2 days, it is known that cheque is bounced. Shop keeper paid the amount to his neighbor. The cost price of cycle is 19 dollars. What is the profit/loss for shop keeper?

a) loss 23 b) gain 23 c) gain 54 d) Loss 54

Solution: Loss = Change of money given to john(4\$) + actual cycle cost 19\$ = 23\$ loss

Pattern 23:

1. A lady has fine gloves and hats in her closet- 18 blue, 32 red, and 25 yellow. The lights are out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?

a) 50 b) 8 c) 60 d) 42

Solution: I am not able to answer this if i go in procedure way so search in net by searching question. Better see below website

My answered questions may be answered there.

2. A lady has fine gloves and hats in her closet- 14 blue, 20 red, and 18 yellow. The lights are out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?

3. A lady has fine gloves and hats in her closet- 13 blue, 27 red, and 40 yellow. The lights are

out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?

4. A lady has fine gloves and hats in her closet- 25 blue, 7 red, and 9 yellow. The lights are out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?

5. A lady has fine gloves and hats in her closet- 26 blue, 30 red, and 56 yellow. The lights are out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?

Pattern 24:

1. Sangakara and Pontingselects batting by using a dice, but dice is biased. So to resolve, Ponting takes out a coin. What is the probability that coin shows correct option?

a) $1/2$ b) $1/6$ c) $1/12$ d) $6/10$

Solution is $1/2$.

2. There is a die with 10 faces. It is not known that fair or not. 2 captains want to toss die for batting selection. What is the possible solution among the following?

a) If no. is odd it is head, if no. is even it is tail

b) If no. is odd it is tail, if no. is even it is head

c) Toss a die until all the 10 digits appear on top face. And if first no. in the sequence is odd then consider it as tail. If it is even consider it as head.

Pattern 25:

1. In a family there are some boys and girls. All boys told that they are having equal no of brothers and sisters and girls told that they are having twice the no. of brothers than sisters. How many boys and girls present in a family?

a) 4 boys and 3 girls b) 3 boys and 4 girls c) 2 boys and 5 girls d) 5 boys and 2 girls

Pattern 26:

1. 10 men and 10 women are there, they dance with each other, is there possibility that 2 men are dancing with same women and vice versa?

a) 22 b) 20 c) 10 d) none

2. There are 100 men and 100 women on the dance floor. They want to dance with each other. Then which of the following statements is always true:

a) There are 2 men who danced with equal no. of women's

b) There are 2 women who danced with equal no. of men

a) both a and b b) only a c) only b d) none

Pattern 27:

1. Middle- earth is a fictional land inhabited by hobbits, elves, dwarves and men. The hobbits and elves are peaceful creatures that prefer slow, silent lives and appreciate nature and art. The dwarves and the men engage in physical games. The game is as follows. A tournament is one where out of the two teams that play a match, the one that loses get eliminated. The matches are played in different rounds, where in every round; half of the teams get eliminated from the tournament. If there are 8 rounds played in knock out tournament, how many matches were played?

a) 257 b) 256 c) 72 d) 255

Solution: Do not know perfect logic 28

2. A game is played between 2 players and one player is declared as winner. All the winners from first round are played in second round. All the winners from second round are played in third round and so on. If 8 rounds are played to declare only one player as winner, how many players are played in first round?

a) 256 b) 512 c) 64 d) 128

Pattern 28:

1. Metal strip of width 'x' cm. 2 metal strips are placed one over the other, then the combine length of 2 strips is 'y'. If 'z' strips are placed in that manner. What is the final width of that arrangement?

2. A, B, C, D, E are there among A, B, C are boys and D, E are girls D is to the left of A and no girl sits at the middle and at the extremes. Then what is the order of their sittings.

Pattern 29:

1. There is 7 friends (A1, A2, A3....A7).If A1 have to have shake with all without repeat. How many handshakes possible?

a) 6 b) 21 c) 28 d) 7

Solution: For handshakes type question i am confirming you that if the there are n members are there

Handshakes are given in linear manner $=n-1$ (last person cannot give hand shake to first person)

Handshakes are given in cyclic manner $=n$ (last person can give hand shake to first person)

But i do not know perfectly for repetition it is $nc2$

2. 49 members attended the party. In that 22 are males, 17 are females. The shake hands between males, females, male and female. Total 12 people given shake hands. How many such kinds of such shake hands are possible?

a) 122 b) 66 c) 48 d) 128

Pattern 30:

1. B is taller than j and 3 pillars. P is shorter than B and 2 pillars is j shorter/taller than P?
a) yes b) no c) may be d) can't find
2. There are 1000 pillars for a temple. 3 friends Linda, Chelsey, Juli visited that temple. (Some unrelated stuff) Linda is taller than Chelsey and taller than 2 of 1000 pillars. Julia is shorter than Linda. Find the correct sentence?
a) Linda is shorter among them
b) Chelsey is taller than Julia
c) Chelsey is shorter than Julia
d) Cannot determine who is taller among Chelsey and Julia

Pattern 31:

1. Entry ticket to an exhibition ranges from 1p to 31p. You need to provide exact change at the counter. You have 31p coin. In how many parts will u divide 31p so that u will provide the exact change required and carry as less coins as possible?
a) 4 b) 5 c) 6 d) 7

Solution: in btech we studied 8 4 2 1 code for binary system in digital logic proceed in that way for answer it is 16 8 4 2 1 if u add all we will get 31 so 5 coins required

Pattern 32:

1. Peter and Paul are two friends. The sum of their ages is 35 years. Peter is twice as old as Paul was when Peter was as old as Paul is now. What is the present age of Peter?
a) 8 b) 20 c) 16 d) 15

Pattern 33:

1. 20 men handshake with each other without repetition. What is the total number of handshakes made?
a) 190 b) 210 c) 150 d) 250
2. 10 people are there, they are shaking hands together, how many hand shakes possible, if they are in no pair of cyclic sequence.
a) 45 b) 9 c) 12 d) 10

Pattern 34:

1. If there are 2 wheelers and 4 wheelers parked in a school located at the heart of the city, find the number of 4 wheelers parked there if there were 20 two wheelers parked there
a) 48 b) 50 c) 52 d) 64

Solution: Proceed with answer is best in question they will give total no of wheels

2. If there are 2 wheelers and 4 wheelers parked in a school located at the heart of the city, find the number of 4 wheelers parked there if there were 58 wheels are parked there
a) 10 b) 33 c) 22 d) none

Pattern 35:

1. A man whose age is 45 yrs has 3 sons named John, Jill, Jack. He went to a park weekly twice. He loves his sons very much. On a certain day he found the shop keepers selling different things. An apple cost 1 penny, 2 chocolate costs 1 penny & 3 bananas cost 1 penny. He has bought equal number of apple, chocolate & banana for each son. If the total amount he invest is 7 penny then how many he has bought from each piece for his son?

a) 1 app, 1 cho, 1 banana b) 1 app, 2 cho, 3 banana c) 1 app, 2 cho, 1 banana

2. One person had three children. He had 7 pennies. Find the distribution of the fruits among the three children. A melon costs 1 penny, 2 oranges cost 1 penny and 3 grapes cost 1 penny
a) 2 melons, 1 orange, 1 grape b) 2 melons, 2 orange, 1 grape c) 1 melons, 2 orange, 1 grape.

Pattern 36:

1) The age of the two friends were in the ratio of 6:5. If the sum of their ages is 55. Then after how many years their ratio will become 8:7?
a) 11 b) 7 c) 10 d) 12

Solution: $6x+5x=55$, so $x=5$, put first ratio after substitution is $(6*5)/(5*5)$ and second ratio is $40/35$ So difference in numerators $40-30=10$ years

2) The age of the two friends were in the ratio of 6:5. If the sum of their ages is 66. Then after how many years their ratio will become 7:6?
a) 11 b) 6 c) 10 d) 12

3) The age of the two friends were in the ratio of 2:3. If the sum of their ages is 55. Then after how many years their ratio will become 4:5?
a) 11 b) 33 c) 22 d) 44

Pattern 37:

1) A volume of 10936 l water is in a container of sphere. How many semisphere of volume 4l each will be required to transfer all the water into the small semispheres?
a) 2812 b) 8231 c) 2734 d) 4222

Pattern 38:

1) A person is manufacturing a house. He bought 20 ropes of wire which has a density of 300 Kg/m³. The height of the building to be constructed is 40 m. If the capacity of the current passed in the wire is 20 A and the voltage capacity is 80 Volts. Then what will be the opposing force to the current if the wire is used?
a) 2 b) 4 c) 8 d) 1600

Solution: ohms law $V=IR$, Opposing force of current is resistance, $R=v/i$

Pattern 39:

1) A horse chases a pony 2 hours after the pony runs. Horse takes 3 hours to reach the pony. If the average speed of the horse is 81Kmph. Then what is the average speed of the pony?

a) 46.4 b) 51 c) 53.4 d) 48.6

Solution: Horse takes 3 hours to cover the distance

Pony takes $3+2=5$ hours to cover the same distance, $\text{Velocity}=\text{distance}/\text{time}$, distance travelled by them is equal it is $81*3=243\text{km}$, speed of pony $=243/5=48.6$

3) A horse chases a pony 3 hours after the pony runs. Horse takes 4 hours to reach the pony. If the average speed of the horse is 35 kmph, what is the average speed of the pony

Pattern 40:

1) The difference between two no is 9 and the product of the two is 14. What is the square of their sum?

a) 120 b) 130 c) 137 d) 145

Solution: $a-b=9$, $ab=14$, $(a-b)^2=a^2+b^2-2*a*b$

2) The sum of two no is 5 and the product of the two is 14. What is the sum of their squares?

3) The sum of the squares of two no is 12 and their sum is 15. Find the product of the two no?

Pattern 41:

1) On planet korba, a solar blast has melted the ice caps on its equator. 9 years after the ice melts, tiny planetoids called echina start growing on the rocks. Echina grows in the form of circle, and the relationship between the diameter of this circle and the age of echina is given by the formula $d = 4*\sqrt{t-9}$ for $t \geq 9$ where d represents the diameter in mm and t the number of years since the solar blast. Jagan recorded the radius of some echina at a particular spot as 7mm. How many years back did the solar blast occur?

a) 17 b) 21.25 c) 12.25 d) 14.05

Solution: radius = 7mm, then diameter $2*\text{radius}$, substitute diameter the in above equation you will get answer

Pattern 42:

1) A man goes 50Km north, then turned left walked 40Km, then turned right? In which direction he is?

a) North b) South c) East d) West

Pattern 43:

1) In T.Nagar the building were numbered from 1 to 100. Then how many 4's will be present in the numbers?

a) 18 b) 19 c) 20 d) 21.

Solution: You have to count and answer but be prepare with answer

2) In T.Nagar the building were numbered from 1 to 100. Then how many 6's will be present in the numbers?

a) 18 b) 19 c) 20 d) 21

3) In T.Nagar the building were numbered from 1 to 100. Then how many 1's will be present in the numbers?

a) 18 b) 19 c) 20 d) 21

4) In T.Nagar the building were numbered from 1 to 100. Then how many 0's will be present in the numbers?

a) 18 b) 19 c) 20 d) 11

Pattern 44:

1) A number when divided by D leaves a remainder of 8 and when divided by 3D leaves a remainder of 21. What is the remainder left, when twice the number is divided by 3D?

a) 13 b) cannot be determined c) 3 d) 42

Pattern 45:

1) Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Ferrari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success. Rohit once bought a Ferrari. It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 35 km/hr and the distance traveled by the Ferrari is 490 km, find the total time taken for Rohit to drive that distance.

a) 20.72 b) 3.5 c) 238.25 d) 6.18

Solution: Speed of Ferrari = $4 \times 35 = 140$, time = distance/velocity,

2) Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Ferrari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success. Rohit once bought a Ferrari. It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 46 km/hr and the distance traveled by the Ferrari is 953 km, find the total time taken for Rohit to drive that distance.

a) 20.72 b) 5.18 c) 238.25 d) 6.18

Pattern 46:

1) A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70. Statement n says 'At least n of the statements on this sheet are false. 'Which statements are true and which are false?

- a) The even numbered statements are true and the odd numbered are false.
- b) The odd numbered statements are true and the even numbered are false.
- c) The first 35 statements are true and the last 35 are false.
- d) The first 35 statements are false and the last 35 are false.

Pattern 47:

1) A man goes north 37km, turns left goes 2km, turns right goes 17km, turns right goes 2km. find distance b/w starting ending point.

- a) 54 b) 27 c) 81 d) 67

Pattern 48:

1) If there are 30 cans out of them one is poisoned if a person tastes very little he will die within 14 hours so if there are mice to test and 24 hours to test, how many mice are required to find the poisoned can?

- a) 3 b) 2 c) 6 d) 1

Pattern 49:

1) If a and b are mixed in 3:5 ration and b and c are mixed in 8:5 ration if the final mixture is 35 liters, find the amount of b ?

- A) 13.34 b) 15.73 c) 16.73 d) 9.45

Solution: Solve for $a:b:c$, then b ratio is $b/(a+b+c)*35$

Pattern 50:

1) If we subtract a number with y , we get 4 increase of number, once it got divided by y itself... Find that number??

- A) 13 b) 12 c) 14 d) 11

Pattern 51:

1) It is the class with the seating arrangement in 4 rows and 8 columns. When the teacher says 'start' the girl who is sitting in first row and first column will say 1, then the next girl sitting behind her will say 4, the next girl sitting behind that girl will say 7, in a particular order each girl is telling a number, the following girls told 10, 13 next turn is yours what u will say?

- a) 15 b) 17 c) 14 d) 16

Solution: It is a series 1, 4, 7, 10, 13.

Pattern 52:

1) It is dark in my bedroom and I want to get two socks of the same color from my drawer, which contains 24 red and 24 blue socks. How many socks do I have to take from the drawer to get at least two socks of the same color?
a) 2 b) 3 c) 48 d) 25

2) Lady has 2 select gloves & hat from a basket. In the dark, she can distinguish hat & gloves. 14 red, 20 blue, 18 green are there. Find probability that any selected glove pair has same color.

3) A lady had fine gloves and hats. 25 blue, 7 red and 9 grey. She had to select a pair among them. But there was no light so she had to select in darkness the correct pair with a glove and a hat. Therefore how many combinations of same color she can select?

Pattern 53:

1) If the Valentine's Day in 2005 falls on Monday, then on which day will the Valentine's Day fall on 2010?
A) Saturday b) Thursday c) Wednesday d) Sunday

Pattern 54:

1. A person run from A to B. He took $\frac{1}{4}$ of the time less to reach B when compare to run at normal Speed. Then how many percentage he has increased his speed?
a) 40 b) 44.4 c) 33.3 d) 22.2

Solution: i do not know perfectly but i have simple logic, $1 - (\frac{1}{4}) = (\frac{3}{4})$, then reverse it so it is $\frac{4}{3} = 1.333$, $1.33 - 1 = 0.33$ like this

2. An athlete decides to run the same distance in $\frac{1}{4}$ th less time that she usually took. By how much percent will she have to increase her average speed?
a) 40 b) 44.4 c) 33.3 d) 22.2

Pattern 55:

1. In a building there are 5 rooms. Each having a equal area. The length of the room is 4m and breadth is 5 m. The height of the rooms are 2m. If 17 bricks are needed to make a square meter then how many bricks are needed to make the floor of a particular room?
a) 320 b) 380 c) 340 d) 300

Solution: area of the room is length*breadth=4*5=20m², For one square meter it takes 17 bricks, For 20m² total no of bricks are 17*20=340,

Pattern 56:

1. One man want to build a wall .The length and breadth of the wall are 20 and 30 respectively. He need 35 bricks for one square centimeter then how many bricks he need?
a) 21,500 b) 30,000 c) 21,000 d) 20,000

Pattern 57:

1. In a hotel we can order two types of varities, but we can make 6 more variteis in home. One can choose the four varities with two from hotel as must. Find how many ways one can order.
a) 14 b) 15 c) 56 d) 28

Pattern 58:

1. If a pipe can fill the tank within 6hrs.But due to leak it takes 30 min more. Now the tank is full then how much time will it take to empty the tank throught the leak?
a) 78 b) 56 c) 66 d) 59

Pattern 59:

1. The bacteria has the probability of split into 3 and probability to die is $\frac{1}{3}$ rd of the total bacteria.Let the probability is P.Some of them survived with probability $\frac{1}{5}$.Then which among the following relation is true?
a) $P=\frac{1}{3}+\frac{1}{5} \times 3$ b) $P=\frac{1}{5} \times (\frac{1}{8}-3)$

2. There is a bacteria which has the probability of die $\frac{1}{3}$ of its total number or it may tripled. Find out the probability
A. $P=\frac{1}{3}+(\frac{2}{3} \times p^3)$ B. $P=\frac{2}{3}+(\frac{2}{3} \times p^3)$ C. $P=\frac{2}{3}+(\frac{1}{3} \times p^3)$ D $P=\frac{2}{3}+(\frac{2}{3} \times p^3)$

Pattern 60:

1. There was a grand mother in a village who had a grand child.Upon asking her grand childs age she told that she is as older as many days old as her daughters age in weeks and as many days as her own age in years.The sum of the three is 130.then how old is the child.?

Pattern 61:

1) In T.Nagar the building were numbered from 1 to 100.Then how many 4's will be present in the numbers?
a)18 b)19 c)20 d)21

2) In Tnagar many buildings were under residential category.for buildings they number as 1 to 100. For shops, corporation numbered between 150 and 200 only prime numbers. how many time 6 will appear in building numbering?

Pattern 62:

1) Amrith told to Anand in front of a Photo that “He is the son of my father’s son”.Find who is in the picture if amrith have no brothers and sisters.
a) Amrith himself b) Amrith’s Uncle c) Amrith’s Father d) Amrith’s son

2) One person has no siblings and says, "the guy in the photo is the only son of my father's son". What is the relation of the guy to the person?

Pattern 63:

1) One grandfather has 3 grandchildren two of the age difference is 3. Eldest child age is 3 times the youngest child's age and the eldest child's age is two years more than the sum of other two children. Find what is the age of the eldest child?
a) 18 b) 22 c) 30 d) 10.

Solution: there are 3 children, let the age of younger be x , elder be $3x$, so the middle one be m , $3x = 2 + x + m$, then we have $a - b = 3$ or $b - c = 3$, or $a - c = 3$, then for answer we have to go via options, substitute that in above equations

2) One grandfather has three grandchildren, two of their age difference is 3, eldest child age is 3 times youngest child's age and eldest child's age is two times of sum of other two children. What is the age of eldest child?

3) One grandfather has three grandchildren, two of their age difference is 3, eldest child age is 3 times youngest child's age and eldest child's age is two times of sum of other two children. What is the age of eldest child?

Pattern 64:

1) In a school, for a student out of 100 he got 74 of average for 7 subjects and he got 79 marks in the 8th subject. what is the average of all the subjects?
a) 76.25 b) 80.25 c) 74.265 d) 74.625

Solution: Total marks = $74 \times 7 = 518$, then average = $(518 + 79) / 8 = 74.625$

Pattern 65:

1) 3 persons A, B, C were there. A always says truth, B lies on Monday, Tuesday, & Wednesday. But C lies on Thursday, Friday & Saturday. One day A said "that B & C said to A that" B said "yesterday was one of the days when I lie", C said that "yesterday was one of the days when I lie too". then which day was that?

a) Sunday b) Thursday c) Saturday d) Tuesday

Pattern 66:

1) Which is the smallest number which divides 2880 and gives a perfect square?
a) 4 b) 9 c) 3 d) 5

Solution: For answer solve via options

Pattern 67:

1) How many 9 digit numbers are possible by using the digits 1,2,3,4,5 which are divisible by 4 if the repetition is allowed?

a)57 b)56 c)59 d)58

2) how many 13 digit numbers are possible by using the digits 1,2,3,4,5 which are divisible by 4 if repetition of digits is allowed?

3) By using 1,2,3,4,5,how many 5 digit no. can be formed which is divisible by 4,repitation of no. is allowed??

4) Form 8 digit numbers from by using 1, 2,3,4,5 with repetition is allowed and must be divisible by4?

5) How many of 14 digit numbers we can make with 1,2,3,4,5 that are divisible by 4. Repetitions allowed.

Pattern 68:

1) Consider two tumblers, the first containing Water and next contains coffee. Suppose you take one spoon of water out of the first tumbler and pour it into the second tumbler. After moving you take one spoon of the mixture from the second tumbler and pour it back into the first tumbler . Which one of the following statement holds now?

- a) There is less coffee in the first tumbler than water in the second tumblers
- b) There is more coffee in the firs tumbler than water in the second tumbler
- c) There is as much coffee in the first tumbler as there is water in the second tumbler
- d)None of the statements holds true

Solution: Think wisely and answer these are asked in my paper 2 or 3 questions

2) Two bowls are taken, one contains water and another contains tea.one spoon of water is added to second bowl and mixed well, and a spoon of mixture is taken from second bowl and added to the second bowl. Which statement will hold good for the above?

Pattern 69:

1) Six friends decide to share a big cake. Since all of them like the cake, they begin quarreling who gets to first cut and have a piece of the cake. One friend suggests that they have a blindfold friend choose from well shuffled set of cards numbered one to six. You check and find that this method works as it should simulating a fair throw of a die. You check by performing multiple simultaneous trials of picking the cards blindfold and throwing a die. You note that the number shown by the method of picking up a card and throwing a real world die, sums to a number between 2 and 12. Which total would be likely to appear more often – 8,9 or 10?

- a) 8 b) All are equally likely c) 9 d) 10

Solution: Calculate how many times 8,9,10 will come when we throw 2 dice, and answer

Pattern 70:

Q1. Given a collection of points P in the plane, a 1-set is a point in P that can be separated from the rest by a line, .i.e the point lies on one side of the line while the others lie on the other side.

The number of 1-sets of P is denoted by $n_1(P)$. The minimum value of $n_1(P)$ over all configurations P of 5 points in the plane in general position (.i.e no three points in P lie on a line) is

a)3 b)5 c) 2 d)1

Ans: 5

For below questions, answers i am not sure whether they are correct or not you have to solve urself

Q2. The citizens of planet nigiet are 8 fingered and have thus developed their decimal system in base 8. A certain street in nigiet contains 1000 (in base 8) buildings numbered 1 to 1000. How many 3s are used in numbering these buildings?

a) 54 b) 64 c) 265 d) 192

Ans: 192

Some times base value is chang like: 9finger, 1 to 100(base 9)

Q3. Given 3 lines in the plane such that the points of intersection form a triangle with sides of length 20, 20 and 30, the number of points equidistant from all the 3 lines is

a)1 b)3 c)4 d)0

Q4. Hare in the other. The hare starts after the tortoise has covered $\frac{1}{5}$ of its distance and that too leisurely³. A hare and a tortoise have a race along a circle of 100 yards diameter. The tortoise goes in one direction and the. The hare and tortoise meet when the hare has covered only $\frac{1}{8}$ of the distance. By what factor should the hare increase its speed so as to tie the race?

a) 37.80 b)8 c) 40 d) 5

Ans: 37.80

Q5. Here 10 programers, type 10 lines with in 10 minutes then 60lines can type within 60 minutes. How many programmers are needed?

a) 16 b) 6 c) 10 d) 60

Solution:(men*time)/work)

Ans: 10

This type of Q's repeated 4times for me but values are different.

Q6. Alok and Bhanu play the following min-max game. Given the expression

$$N = 9 + X + Y - Z$$

Where X, Y and Z are variables representing single digits (0 to 9), Alok would like to maximize N while Bhanu

would like to minimize it. Towards this end, Alok chooses a single digit number and Bhanu

substitutes this for a variable of her choice (X, Y or Z). Alok then chooses the next value and Bhanu, the variable to substitute the value. Finally Alok proposes the value for the remaining variable. Assuming both play to their optimal strategies, the value of N at the end of the game would be

- a) 0 b) 27 c) 18 d) 20

The Q's concept is same but the equation of N's is changing.

Q7. Alice and Bob play the following coins-on-a-stack game. 20 coins are stacked one above the other. One of them is a special (gold) coin and the rest are ordinary coins. The goal is to bring the gold coin to the top by repeatedly moving the topmost coin to another position in the stack.

Alice starts and the players take turns. A turn consists of moving the coin on the top to a position i below the top coin ($0 \leq i \leq 20$). We will call this an i -move (thus a 0-move implies doing nothing). The proviso is that an i -move cannot be repeated; for example once a player makes a 2-move, on subsequent turns neither player can make a 2-move. If the gold coin happens to be on top when it's a player's turn then the player wins the game. Initially, the gold coin is the third coin from the top. Then

- a) In order to win, Alice's first move should be a 1-move.
- b) In order to win, Alice's first move should be a 0-move.
- c) In order to win, Alice's first move can be a 0-move or a 1-move.
- d) Alice has no winning strategy.

Ans: d

Q8. For the FIFA world cup, Paul the octopus has been predicting the winner of each match with amazing success. It is rumored that in a match between 2 teams A and B, Paul picks A with the same probability as A's chances of winning. Let's assume such rumors to be true and that in a match between Ghana and Bolivia, Ghana the stronger team has a probability of $\frac{2}{3}$ of winning the game. What is the probability that Paul will correctly pick the winner of the Ghana-Bolivia game?

- a) $\frac{1}{9}$ b) $\frac{4}{9}$ c) $\frac{5}{9}$ d) $\frac{2}{3}$

Ans: $\frac{5}{9}$

Q9. 36 people $\{a_1, a_2, \dots, a_{36}\}$ meet and shake hands in a circular fashion. In other words, there are totally 36 handshakes involving the pairs, $\{a_1, a_2\}$, $\{a_2, a_3\}$, ..., $\{a_{35}, a_{36}\}$, $\{a_{36}, a_1\}$. Then size of the smallest set of people such that the rest have shaken hands with at least one person in the set is

- a) 12 b) 11 c) 13 d) 18

Ans: 18

Q10. After the typist writes 12 letters and addresses 12 envelopes, she inserts the letters randomly into the envelopes (1 letter per envelope). What is the probability that exactly 1 letter is inserted in an improper envelope?

- a) $\frac{1}{12}$ b) 0 c) $\frac{12}{2^{12}}$ d) $\frac{11}{12}$

Ans: b

Q11. A sheet of paper has statements numbered from 1 to 40. For each value of n from 1 to

40,

statement n says "At least n of the statements on this sheet are true." Which statements are true and which are false?

- a) The even numbered statements are true and the odd numbered are false.
- b) The first 26 statements are false and the rest are true.
- c) The first 13 statements are true and the rest are false.
- d) The odd numbered statements are true and the even numbered are false.

Ans: c

Q12. There are two boxes, one containing 10 red balls and the other containing 10 green balls. You are allowed to move the balls between the boxes so that when you choose a box at random and a ball at random from the chosen box, the probability of getting a red ball is maximized. This maximum probability is

- a) $\frac{1}{2}$ b) $\frac{14}{19}$ c) $\frac{37}{38}$ d) $\frac{3}{4}$

Ans: $\frac{14}{19}$

Q13. A circular dartboard of radius 1 foot is at a distance of 20 feet from you. You throw a dart at it and it hits the dartboard at some point Q in the circle. What is the probability that Q is closer to the center of the circle than the periphery?

- a) 0.75 b) 1 c) 0.5 d) 0.25

Ans: d

Q14. 9. A and B play a game of dice between them. The dice consist of colors on their faces (instead of numbers). When the dice are thrown, A wins if both show the same color; otherwise B wins. One die has 4 red face and 2 blue faces. How many red and blue faces should the other die have if the both players have the same chances of winning?

- a) 3 red and 3 blue faces b) 2 red and remaining blue
- c) 6 red and 0 blue d) 4 red and remaining blue

Ans: a

Q15. On planet zorba, a solar blast has melted the ice caps on its equator. 8 years after the ice melts, tiny plantoids called echina start growing on the rocks. echina grows in the form of a circle and the relationship between the diameter of this circle and the age of echina is given by the formula

$$d = 4 * \sqrt{t - 8} \text{ for } t \geq 8$$

Where d represents the diameter in mm and t the number of years since the solar blast.

Jagan recorded the time of some echina at a particular spot is 24 years then what is diameter?

- a) 8 b) 16 c) 25 d) 21

Ans: 16

Q16. A sheet of paper has statements numbered from 1 to 40. For all values of n from 1 to 40, statement n says: 'Exactly n of the statements on this sheet are false.' Which statements are

true and which are false?

- a) The even numbered statements are true and the odd numbered statements are false.
- b) The odd numbered statements are true and the even numbered statements are false.
- c) All the statements are false.
- d) The 39th statement is true and the rest are false.

Ans: d

Q17. Alok and Bhanu play the following coins in a circle game. 99 coins are arranged in a circle with each coin touching two other coin. Two of the coins are special and the rest are ordinary. Alok starts and the players take turns removing an ordinary coin of their choice from the circle and bringing the other coins closer until they again form a (smaller) circle. The goal is to bring the special coins adjacent to each other and the first player to do so wins the game. Initially the special coins are separated by two ordinary coins O1 and O2. Which of the following is true?

- a) In order to win, Alok should remove O1 on his first turn.
- b) In order to win, Alok should remove one of the coins different from O1 and O2 on his first turn.
- c) In order to win, Alok should remove O2 on his first turn.
- d) Alok has no winning strategy.

Ans: d

Q18. Two pipes A and B fill at A certain rate B is filled at 10, 20, 40, 80. If 1/4 of B if filled in 21 hours what time it will take to get completely filled

Ans: 23

Q19. Find average speed if a man travels at speed of 24kmph up and 36kmph down at an altitude of 200m.

Formula is $2xy/(x+y)$.

Q20. One grandfather has three grandchildren, two of their age difference is 3, eldest child age is 3 times youngest child's age and eldest child's age is two times of sum of other two children. What is the age of eldest child?

Ans: 18

Q21. Ferrari is leading car manufacturer. *Ferrari S.p.A.* is an Italian sports car. It has enjoyed great success. If Mohan's Ferrari is 3 times faster than his old Mercedes which gave him 35kmph if Mohan travelled 490 km in his ferrari the how much time(hours) he took?
Easy one try it.

Q22. By using 1,2,3,4,5, how many 12 digit no. can be formed which is divisible by 4, repetition of no. is allowed?

Ans: $(5)^{11}$

Q23. The cost 1 plum is 1 cent, 2 apples is 1 cent, 3 cashew is 1 cent. If father buys same amount of fruits for his 3 sons spending 7 cent then what amount of fruit each child will get?

Ans: 1plum, 2apples, 1cashew

Q24. There are some 2 wheelers and 4 wheelers parked total number of wheels present is 240 then how many 4 wheelers were there

Ans: For this question answer is deduced from the options.

Q25. One day Alice meets pal and byte in fairyland. She knows that pal lies on Mondays, Tuesdays and Wednesdays and tells the truth on the other days of the week byte, on the other hand, lies on Thursdays, Fridays and Saturdays, but tells the truth on the other days of the week. Now they make the following statements to Alice – pal. Yesterday was one of those days when I lie byte. Yesterday was one of those days when I lie too. What day is it?

a) Thursday b) Tuesday c) Monday d) Sunday

Ans: a