Practice Paper

1. P works thrice as fast as Q, whereas P and O together can work four times as fast as R. If P, Q and R together work on a job, in what ratio should they share the earnings?

(a) 3:1:1 (b) 3:2:4 (c) 4:3:4 (d) 3:1:4

Answer: Option 1 : 3 : 1 : 1

Explanation:

P is thrice as fast than Q

P and Q is 4 time as fast as R

⇒ P = 3Q ... (1)

⇒ P + Q = 4R .... (2)

By equation (1) and (2)

⇒ Q = R..... (3)

So, P is thrice efficient as Q and R

The ratio of earning of P, Q, and R = 3 : 1 : 1

∴ The required result will be "3 : 1 : 1"

2. The monthly incomes of X and Y are in the ratio of 4:3 and their monthly expenses are in the ratio of 3:2. However, each saves Rs 6,000 per month.What is their total monthly income?

(a) Rs 28,000 (b) Rs 42,000 (c) Rs 56,000 (d) Rs 84,000

Answer: option (b) Rs. 42,000

Explanation:

The monthly incomes of X and Y are in the ratio of 4 : 3. Let them be 4a and 3a.

Their monthly expenses are in the ratio of 3:2. Let them be 3b and 2b.

As each save Rs 6,000 per month, we get two equations:

Saving = Income – Expenditure

So, 4a – 3b = 6000

and 3a – 2b = 6000

On solving we get: a = 6000 and b = 6000

Their total monthly income = 4a + 3a = 7a = 7 × 6000 = Rs. 42,000

3. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?

a.4 years b. 8 years c. 10 years d. None of these

Answer: Option a

Explanation:

Let the ages of children be x, $(x + 3)$, $(x + 6)$, $(x + 9)$ and $(x + 12)$ years.

Then, $x + (x + 3) + (x + 6) + (x + 9) + (x + 12) = 50$

$\Rightarrow 5x = 20$

$\Rightarrow x = 4.$

$\therefore$ Age of the youngest child = x = 4 years.

4. A father said to his son, "I was as old as you are at the present at the time of your birth". If the father's age is 38 years now, the son's age five years back was:

a. 14 years b. 19 years c. 33 years d. 38 years

Answer: Option

Explanation:

Let the son's present age be x years. Then, $(38 - x) = x$

$\Rightarrow 2x = 38.$

$\Rightarrow x = 19.$

$\therefore$ Son's age 5 years back (19 - 5) = 14 years.

5. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B?

a. 7 b. 8 c. 9 d.10

Answer: Option d

Explanation:

Let C's age be x years. Then, B's age = $2x$ years. A's age = $(2x + 2)$ years.

$\therefore$ $(2x + 2) + 2x + x = 27$

$\Rightarrow$ $5x = 25$

$\Rightarrow$ $x = 5$.

Hence, B's age = $2x = 10$ years.

6. Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?

a. 24 b. 27 c. 40 d. Cannot be determined

Answer: Option a

Explanation:

Let the present ages of Sameer and Anand be $5x$ years and $4x$ years respectively.

Then, $\frac{5x + 3}{4x + 3} = \frac{11}{9}$

$\Rightarrow$ $9(5x + 3) = 11(4x + 3)$

$\Rightarrow$ $45x + 27 = 44x + 33$

$\Rightarrow$ $45x - 44x = 33 - 27$

$\Rightarrow$ $x = 6$.

$\therefore$ Anand's present age = $4x = 24$ years.

7. A person's present age is two-fifth of the age of his mother. After 8 years, he will be one-half of the age of his mother. How old is the mother at present?

a. 32 years b. 36 years c. 40 years d. 48 years

Answer: Option c

Explanation:

Let the mother's present age be x years.

Then, the person's present age = $\left(\frac{2}{5}x\right)$ years.

$\therefore$ $\left(\frac{2}{5}x + 8\right) = \frac{1}{2}(x + 8)$

$\Rightarrow$ $2(2x + 40) = 5(x + 8)$

$\Rightarrow$ $x = 40$.

8. A student appeared in 6 papers. The maximum marks are the same for each paper. His marks in these papers are in the proportion of 5: 6 : 7: 8 : 9 : 10. Overall he scored 60%. In how many number of papers did he score less than 60% of the maximum marks?

(a) 2 (b) 3 (c) 4 (d) 5

Answer: Option b : 3

Explanation:

Ratio of the marks scored in papers = 5 : 6 : 7 : 8 : 9 : 10

(Sum of marks scored / Total marks) × 100 = 60

Assume maximum marks for each subject = 100

⇒ Total marks in 6 subjects = 600

Now, taking the values of marks scored in each paper as 5x, 6x, 7x, 8x, 9x and 10x

Total marks scored = 5x + 6x + 7x + 8x + 9x +10x = 45x

Since, Overall Score = 60%

⇒45 x / 600 × 100 = 60

⇒ x = 360/45 = 8

Marks obtained in subjects are 40, 48, 56, 64, 72, 80
Now, to score more than 60% in each paper marks required = (60 /100) × 100
Marks of three paper i.e. 40, 48 and 56 are less than 60.
Hence, option 2 is correct.

9. Two cities A and B are 360 km apart. A car goes from A to B with a speed of 40 km/hr and returns to A with a speed of 60 km/hr. What is the average speed of the car?
(a) 45 km/hr (b) 48 km/hr (c) 50 km/r (d) 55 km/hr
Answer: Option b : 48 km/hr
Explanation: Distance between A and B is 360 km/hr
Formula average speed of car at a speed u and v = 2uv/u+v
average speed car = (2 × 40 × 60)/(40 + 60)
⇒ 4800/100 ⇒ 48 km/hr
∴ The required answer is 48 km/hr

10.A train overtakes two persons walking along a railway track. The first one walks at 4.5 km/hr. The other one walks at 5.4 km/hr. The train needs 8.4 and 8.5 seconds respectively to overtake them. What is the speed of the train if both the persons are walking in the same direction as the train?

a. 66 km/hr b. 72 km/hr c. 78 km/hr d. 81 km/hr
Answer: Option d
Explanation:

4.5 km/hr =	$\left(4.5 \times \frac{5}{18}\right)$	m/sec =	$\frac{5}{4}$	m/sec = 1.25 m/sec, and
5.4 km/hr =	$\left(5.4 \times \frac{5}{18}\right)$	m/sec =	$\frac{3}{2}$	m/sec = 1.5 m/sec.

Let the speed of the train be *x* m/sec.

Then, (*x* - 1.25) x 8.4 = (*x* - 1.5) x 8.5

$\Rightarrow$ 8.4*x* - 10.5 = 8.5*x* - 12.75

$\Rightarrow$ 0.1*x* = 2.25

$\Rightarrow$ *x* = 22.5

∴ Speed of the train =	$\left(22.5 \times \frac{18}{5}\right)$		km/hr = 81 km/hr.

11. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:
a. Rs. 120 b. Rs. 121 c. Rs. 122 d. Rs. 123
Answer: Option b
Explanation:

Amount	$= \text{Rs.} \left[1600 \times \left(1 + \frac{5}{2 \times 100}\right)^2 + 1600 \times \left(1 + \frac{5}{2 \times 100}\right)\right]$
	$= \text{Rs.} \left[1600 \times \frac{41}{40} \times \frac{41}{40} + 1600 \times \frac{41}{40}\right]$
	$= \text{Rs.} \left[1600 \times \frac{41}{40} \left(\frac{41}{40} + 1\right)\right]$

	= Rs. $\left[\frac{1600 \times 41 \times 81}{40 \times 40}\right]$
	= Rs. 3321.

$\therefore$ C.I. = Rs. (3321 - 3200) = Rs. 121

12. The difference between simple and compound interests compounded annually on a certain sum of money for 2 years at 4% per annum is Re. 1. The sum (in Rs.) is:

a. 625 b. 630 c. 640 d. 650

Answer: Option a

Explanation:

Let the sum be Rs. *x*. Then,

C.I. =	$\left[x\left(1+\frac{4}{100}\right)^2 - x\right]$	=	$\left(\frac{676}{625}x - x\right)$	=	$\frac{51}{625}x$.
S.I. =	$\left(\frac{x \times 4 \times 2}{100}\right)$	=	$\frac{2x}{25}$.
$\therefore$	$\frac{51x}{625} - \frac{2x}{25} = 1$				

$\Rightarrow$ x = 625.

13. There is 60% increase in an amount in 6 years at simple interest. What will be the compound interest of Rs. 12,000 after 3 years at the same rate?

a. Rs. 2160 b. Rs. 3120 c. Rs. 3972 d. Rs. 6240

Answer: Option c

Explanation:

Let P = Rs. 100. Then, S.I. Rs. 60 and T = 6 years.

$\therefore$ R =	$\left(\frac{100 \times 60}{100 \times 6}\right)$	= 10% p.a.

Now, P = Rs. 12000. T = 3 years and R = 10% p.a.

$\therefore$ C.I.	= Rs.	$\left[12000 \times \left\{\left(1+\frac{10}{100}\right)^3 - 1\right\}\right]$			
	= Rs.	$\left(12000 \times \frac{331}{1000}\right)$			
	= 3972.				

14. What is the difference between the compound interests on Rs. 5000 for $1\frac{1}{2}$ years at 4% per annum compounded yearly and half-yearly?

a. Rs. 2.04 b. Rs. 3.06 c. Rs. 4.80 d. Rs. 8.30

Answer: Option a

Explanation:

C.I. when interest compounded yearly	$= \text{Rs.} \left[5000 \times \left(1 + \frac{4}{100}\right) \times \left(1 + \frac{\frac{1}{2} \times 4}{100}\right)\right]$
	$= \text{Rs.} \left(5000 \times \frac{26}{25} \times \frac{51}{50}\right)$
	= Rs. 5304.
C.I. when interest is compounded half-yearly	$= \text{Rs.} \left[5000 \times \left(1 + \frac{2}{100}\right)^3\right]$
	$= \text{Rs.} \left(5000 \times \frac{51}{50} \times \frac{51}{50} \times \frac{51}{50}\right)$
	= Rs. 5306.04

$\therefore$ Difference = Rs. (5306.04 - 5304) = Rs. 2.04

15.A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?

a. 1/3 **b. ¼** **c. 1/5** **d. 1/8**

Answer: Option b

Explanation:

Suppose the vessel initially contains 8 litres of liquid.

Let *x* litres of this liquid be replaced with water.

Quantity of water in new mixture =	$\left(3 - \frac{3x}{8} + x\right)$ litres
Quantity of syrup in new mixture =	$\left(5 - \frac{5x}{8}\right)$ litres

$\therefore \left(3 - \frac{3x}{8} + x\right) = \left(5 - \frac{5x}{8}\right)$

$\Rightarrow 5x + 24 = 40 - 5x$

$\Rightarrow 10x = 16$

$\Rightarrow x = 8.$

	5
So, part of the mixture replaced =	$\left(\frac{8}{5} \times \frac{1}{8}\right) = \frac{1}{5}$

16. Tea worth Rs. 126 per kg and Rs. 135 per kg are mixed with a third variety in the ratio 1 : 1 : 2. If the mixture is worth Rs. 153 per kg, the price of the third variety per kg will be:

a.Rs. 169.50 b. Rs. 170 c. Rs. 175.50 d. Rs. 180

Answer: Option c
Explanation:

Since first and second varieties are mixed in equal proportions.

So, their average price = Rs.	$\left(\frac{126 + 135}{2}\right)$	= Rs. 130.50

So, the mixture is formed by mixing two varieties, one at Rs. 130.50 per kg and the other at say, Rs. *x* per kg in the ratio 2 : 2, *i.e.,* 1 : 1. We have to find *x*.

By the rule of alligation, we have:

Cost of 1 kg of 1st kind	Cost of 1 kg tea of 2nd kind	
Rs. 130.50	Mean Price Rs. 153	Rs. *x*
(*x* - 153)		22.50

$\therefore \frac{x - 153}{22.50} = 1$

$\Rightarrow x - 153 = 22.50$

$\Rightarrow x = 175.50$

17. A milk vendor has 2 cans of milk. The first contains 25% water and the rest milk. The second contains 50% water. How much milk should he mix from each of the containers so as to get 12 litres of milk such that the ratio of water to milk is 3 : 5?
a. 4 litres, 8 litres b. 5 litres, 7 litres c. 6 litres, 6 litres d. 7 litres, 5 litres
Answer: Option
Explanation: c

Let the cost of 1 litre milk be Re. 1

Milk in 1 litre mix. in 1st can =	$\frac{3}{4}$	litre, C.P. of 1 litre mix. in 1st can Re.	$\frac{3}{4}$
Milk in 1 litre mix. in 2nd can =	$\frac{1}{2}$	litre, C.P. of 1 litre mix. in 2nd can Re.	$\frac{1}{2}$
Milk in 1 litre of final mix. =	$\frac{5}{8}$	litre, Mean price = Re.	$\frac{5}{8}$

By the rule of alligation, we have:

C.P. of 1 litre mixture in 1st can		C.P. of 1 litre mixture in 2nd can
$\frac{3}{4}$	Mean Price $\frac{5}{8}$	$\frac{1}{2}$
1		1

8		8
∴ Ratio of two mixtures = $\frac{1}{8}$: $\frac{1}{8}$ = 1 : 1.		
So, quantity of mixture taken from each can =	$\left(\frac{1}{2} \times 12\right)$	= 6 litres.

18. In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg respectively so as to get a mixture worth Rs. 16.50 kg?

a. 3 : 7 b. 5 : 7 c. 7 : 3 d.7 : 5

Answer: Option c

Explanation:

By the rule of alligation:

Cost of 1 kg pulses of 1st kind	Cost of 1 kg pulses of 2nd kind	
Rs. 15	Mean Price Rs. 16.50	Rs. 20
3.50		1.50

∴ Required rate = 3.50 : 1.50 = 7 : 3.

19. If R and S are different integers both divisible by 5, then which of the following is not necessarily true?

(a) R - S is divisible by 5 (b) R + S is divisible by 10

(c) R × S is divisible by 25 (d) $R^2 + S^2$ is divisible by 5

Answer: b

Explanation: (b) By looking at all the options, we observe that option (b) is not necessarily true.

We know that, a number is divisible by 10 iff it has 0 at the unit's place.

(R + S) may or may not have 0 at the unit's place.

Therefore, it may or may not be divisible by 10.

Thus, it is not necessarily true.

20. Certain 3-digit numbers have the following characteristics:

1. All the three digits are different.
2. The number is divisible by 7.
3. The number on reversing the digits is also divisible by 7.

How many such 3-digit numbers are there?

(a) 2 (b) 4 (c) 6 (d) 8

Answer: (b) 4

Explanation:

Let the numbers are of the form abc.

So, According to question, 100 a + 10 b + c = 7K.....(i)

100 c + 10 b + a = 7m.....(ii)

From, (i)-(ii)

99 a - 99 c = 7 (k - m)

99 (a - c) = 7n

a - c = 7

a = 9, c = 2

a = 8, c = 1

Hence, 4 numbers, 259, 952, 168 and 861.

21. In a school every student is assigned a unique identification number. A student is a football player if and only if the identification number is divisible by 4, whereas a student is a cricketer if and only if the identification number is divisible by 6. If every number from 1 to 100 is assigned to a student, then how many of them play cricket as well as football ?

(a) 4 (b) 8 (c) 10 (d) 12

Answer: option is (b) 8

Explanation:

L.C.M. of 4 and 6 = 12.

Hence the number assign to the students who play cricket as well as football is divisible by 12.

Number divisible by 12 are 12, 24, 36.....

Total number of such Numbers up to 100 = 8.
And that are 12, 24, 36, 48, 60, 72, 84, 96.
Hence required number = 8.

22. Consider two statements S1 and S2 followed by a question :
S1: p and q both are prime numbers.
S2: p + q is an odd integer.
Question: Is pq an odd integer?
Which one of the following is correct?
(a) S1 alone is sufficient to answer the question
(b) S2 alone is sufficient to answer the question
(c) Both S1 and S2 taken together are not sufficient to answer the question
(d) Both S1 and S2 are necessary to answer the question
Answer: option is (b) S2 alone is sufficient to answer the question.
Explanation:
From statement s2, (p + q) is an odd integers i.e., p and q are not either even or odd simultaneously.
so, p and q are even and odd respectively and vice-versa.
Hence, pq is always odd is incorrect.
pq is always even.

23.Sunita cuts a sheet of paper into three pieces. Length of first piece is equal to the average of the three single digit odd prime numbers. Length of the second piece is equal to that of the first plus one-third the length of the third. The third piece is as long as the other two pieces together. The length of the original sheet of paper is
(a)13 units (b) 15 units (c) 16 units (d) 30 units
Answer: option is (d) 30 units
Explanation:
Let the three pieces be x, y and z
Length of x = Average of three single digit odd prime numbers
⇒ (3 + 5 + 7)/3
⇒ 5
Length of y = x + (z/3)
y = (3x + z)/3
y = (15 + z)/3 ---(i) (x = 5)
z = x + y ---(ii)
From (i) & (ii),
y = (15 + x + y) / 3
3y = 15 + 5 + y
3y - y = 20
2y = 20
y = 10
From (ii),
z = x + y
z = 10 + 5
z = 15
Length of the original sheet = x + y + z
⇒ 5 + 10 + 15 ⇒ 30
∴ The length of the original paper is 30 units.

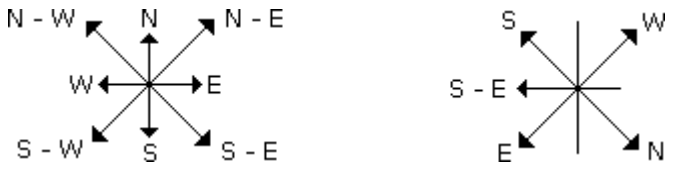
24. If X is between -3 and -1, and Y is between -1 and 1, then $X^2 - y^2$ is in between which of the following?
(a) -9 and 1 (b) -9 and -1 (c) 0 and 8 (d) 0 and 9
Answer: Option 4 : 0 and 9
Explanation:
If X is between -3 and -1, and
Y is between -1 and 1
X lies between -3 to -1 so, 0 < x2 < 9
Y lies between -1 to 1 so, 0 < y2 < 1
Least value of x2 - y2 = 0 - 0 = 0
Maximum value of x2 - y2 = 9 - 0 = 9
So, 0 < x2 - y2 < 9
∴ Option 4 will be the correct choice.

25.The recurring decimal representation 1.272727….. is equivalent to
(a) 13/11 (b) 14/11 (c) 127/99 (d) 137/99

Answer: option (b)
Explanation:
⇒ 14/11 1.272727.... = 127 − 1 /99 = 1.272727....
⇒ 127 – 1/ 99 = 126/ 99
⇒ 126/ 99 = 14/ 11

26. Consider all 3-digit numbers (without repetition of digits) obtained using three non-zero digits which are multiples of 3. Let S be their sum. Which of the following is/are correct?
1. S is always divisible by 74.
2. S is always divisible by 9.
Select the correct answer using the code given below:
(a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2
Answer: option is (1) Both 1 and 2
Explanation:
3 digit numbers obtained using digit of 3 i.e. 3, 6 and 9.
So, numbers are 369, 369, 639, 693, 936 and 963.
So, sum S = 369 + 396 + 639 + 693 + 636 + 963 = 3996
Here, number 3996 is divisible by 74 and 9.

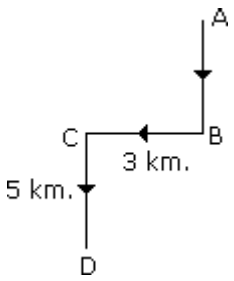
27. If South-East becomes North, North-East becomes West and so on. What will West become?
a. North-East b. North-West c. South-East d.South-West
Answer: Option c
Explanation:



It is clear from the diagrams that new name of West will become South-East.

28. A man walks 5 km toward south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. Now in which direction is he from the starting place?

a. West b. South c. North-East d. South-West
Answer: Option d
Explanation:



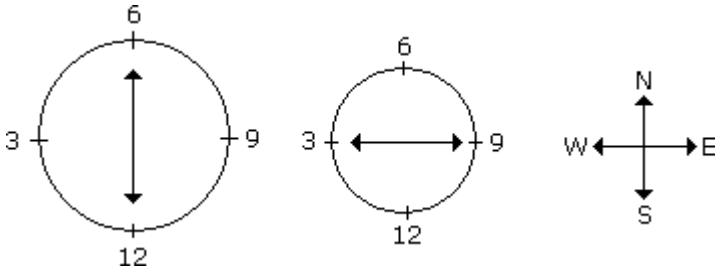
Hence required direction is South-West.

29. Rahul put his timepiece on the table in such a way that at 6 P.M. hour hand points to North. In which direction the minute hand will point at 9.15 P.M. ?

a. South-East b. South c. North d. West

Answer: Option d

Explanation:



At 9.15 P.M., the minute hand will point towards west.

Question 30 to 32

In an Exhibition seven cars of different companies - Cadillac, Ambassador, Fiat, Maruti, Mercedes, Bedford and Fargo are standing facing to east in the following order :

1. Cadillac is next to right of Fargo.
2. Fargo is fourth to the right of Fiat.
3. Maruti car is between Ambassador and Bedford.
4. Fiat which is third to the left of Ambassador, is at one end.

30. Which of the cars are on both the sides of cadillac car ?

a. Ambassador and Maruti b. Maruti and Fiat
c. Fargo and Mercedes d. Ambassador and Fargo

Answer: Option c

Explanation:

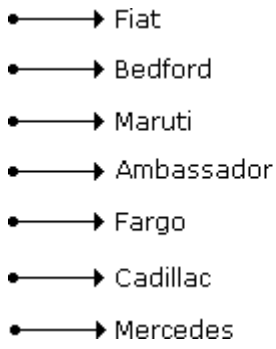
Fargo and Mercedes are on both the sides of cadillac car.

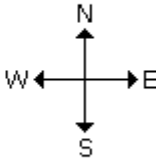
31. Which of the following statement is correct ?

a. Bedford is next left of Fiat. b. Bedford is at one end.
c. Maruti is next left of Ambassador. d. Fiat is next second to the right of Maruti.

Answer: Option c

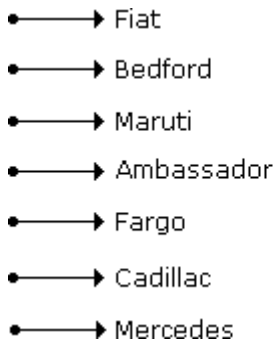
Explanation:

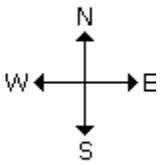




Therefore, Maruti is next left of Ambassador.

32. Which one of the following statements is correct ?
a. Fargo car is in between Ambassador and Fiat. b. Fargo is next right of Cadillac.
c.Cadillac is next left to Mercedes car. d. Maruti is fourth right of Mercedes.
Answer: Option c
Explanation:





Therefore, Cadillac is next left to Mercedes car.

33. At present, the ratio between the ages of Arun and Deepak is 4 : 3. After 6 years, Arun's age will be 26 years. What is the age of Deepak at present ?
a. 12 years b. 15 years c. 19 and half d. 21 years
Answer: Option b
Explanation:

Let the present ages of Arun and Deepak be 4*x* years and 3*x* years respectively. Then,

$4x + 6 = 26 \Leftrightarrow 4x = 20$

$x = 5$.

$\therefore$ Deepak's age = $3x = 15$ years.

34. Sachin is younger than Rahul by 7 years. If their ages are in the respective ratio of 7 : 9, how old is Sachin?
a. 16 years b. 18 years c. 28 years d. 24.5 years
Answer: Option d
Explanation:

Let Rahul's age be *x* years.

Then, Sachin's age = (*x* - 7) years.

$$\therefore \frac{x-7}{x} = \frac{7}{9}$$

$\Rightarrow 9x - 63 = 7x$

$\Rightarrow 2x = 63$

$\Rightarrow x = 31.5$

Hence, Sachin's age =(x - 7) = 24.5 years.

Fill in the blanks (Q.35 to Q.39)

35.John is_____the grocery store.

a. at b. in c. on d. None

Ans- a

36. Mary is reading a book_____the library.

a. in b. on c. onto d. at

Ans- a

37. Jason will be back_____an hour.

a. in b. on c. onto d. at

Ans- a

38. Linda is sitting_____the park bench.

a. on b. from c. onto d. at

Ans-a

39.A letter_____Jane arrived today.

a. from b. on c. onto d. at

Ans-a

40. Find the Antonyms of surrender

a. abandon b. relinquish c. resign d. None

Ans- d

41. Find the antonyms of adjacent

a. contiguous b. along c. beside d. None

Ans- d

42. When 70% of a number x is added to another number y, the sum becomes. 165% of the value of y. When 60% of the number x is added to another number z, then the sum becomes 165% of the value of z. Which one of the following is correct?

a. z<x<y

b. x<y<z

c. y<x<z

d. z<y<x

Answer : Option a

Explanation:

To simplify we write percentages in decimal form,

0.7 x + y = 1.65 y

Or 0.7 x = 0.65 y

Or x/y = 0.65/0.70, which is less than 1.

Hence, x < y .....(i)

Now, 0.6 x + z = 1.65 z

Or 0.6 x = 0.65 z

Or x/z = 0.65/0.60, which is greater than 1.

Hence, x > z .....(ii)

From (i) and (ii), we get:

z < x < y

43. Two persons, A and B are running on a circular track. At the start, B is ahead of A and their positions make an angle of 30° at the centre of the circle. When A reaches the point diametrically opposite to his starting point, he meets B. What is the ratio of speeds of A and B, if they are running with uniform speeds?

(a) 6:5 (b) 4:3 (c) 6:1 (d) 4:2

Answer: Option a : 6 : 5

Explanation:

Speed = Distance/Time

⇒ Time travel is the same for both A and B

⇒ Distance travelled by A = π × r
⇒ Distance travelled by B = (π × r) - (π × r)/6 = 5πr/6
⇒ The ratio of the speed of A and B = 6 : 5 (Speed is the same for both)
∴ The required result will be "6 : 5"

44. A person X can complete 20% of work in 8 days and another person Y can complete 25% of the same work in 6 days. If they work together, in how many days will 40% of the work be completed?
(a) 6 (b) 8 (c) 10 (d) 12
Answer: Option a : 6
Explanation:
X can complete 20% of the total work in 8 days.
Y can complete 25% of the total work in 6 days.
Total work = Efficiency × Time
X complete 20% of the work in 8 days.
⇒ 100% = 8 × (100/20) = 40 X complete full work in 40 days.
Y complete 25% of the work in 6 days.
⇒ 100% = 6 × (100/25) = 24
X complete full work in 24 days.

	Time	Total work (LCM of time taken by X and Y)	Efficiency
X	40		3
		120	
Y	24		5

Now, 40% of total work
⇒ 40% = 120 × (40/100) = 48
Time taken by X and Y
⇒ Time = Work/Efficiency
⇒ Time = 48/(3 + 5)
⇒ Time = 6 days
∴ X and Y will take 6 days to complete 40% of the work.

45. The ratio of the number of boys and girls in a college is 7 : 8. If the percentage increase in the number of boys and girls be 20% and 10% respectively, what will be the new ratio?
a. 8 : 9 b. 17 : 18 c. 21 : 22 d. Cannot be determined
Answer: Option c
Explanation:

Originally, let the number of boys and girls in the college be 7*x* and 8*x* respectively.

Their increased number is (120% of 7*x*) and (110% of 8*x*).

$\Rightarrow \left(\frac{120}{100} \times 7x\right)$ and $\left(\frac{110}{100} \times 8x\right)$

$\Rightarrow \frac{42x}{5}$ and $\frac{44x}{5}$

∴ The required ratio = $\left(\frac{42x}{5} : \frac{44x}{5}\right)$ = 21 : 22.

46. The monthly average salary paid to all the employees of a company was Rs. 5000. The monthly average salary paid to male and female employees was Rs. 5200 and Rs. 4200 respectively. Then the percentage of males employed in the company is
(a) 75% (b) 80% (c) 85% (d) 90%
Answer: Option b)

Explanation:
Let the number of employees in the company be 100 and
the number of male employees in the company be x.
So, the number of female employees = 100 – x.
According to the question,

$\Rightarrow \quad 52x + 42(100 - x) = 5000$

$\Rightarrow \quad 52x + 4200 - 42x = 5000$

$\Rightarrow \quad 10x = 800 \quad \Rightarrow \quad x = 80$

So, there are 80% male employees in the company.

47. Salaries of Ravi and Sumit are in the ratio 2 : 3. If the salary of each is increased by Rs. 4000, the new ratio becomes 40 : 57. What is Sumit's salary?

a.Rs. 17,000 b. Rs. 20,000 c. Rs. 25,500 d. Rs. 38,000
Answer: Option d
Explanation:

Let the original salaries of Ravi and Sumit be Rs. 2*x* and Rs. 3*x* respectively.

Then,	$\frac{2x + 4000}{3x + 4000}$	=	$\frac{40}{57}$

$\Rightarrow$ 57(2*x* + 4000) = 40(3*x* + 4000)

$\Rightarrow$ 6*x* = 68,000

$\Rightarrow$ 3*x* = 34,000

Sumit's present salary = (3*x* + 4000) = Rs.(34000 + 4000) = Rs. 38,000.

48. If 0.75 : *x* :: 5 : 8, then *x* is equal to:
a.1.12 b.1.20 c. 1.25 d. 1.30
Answer: Option b
Explanation:

(*x* x 5) = (0.75 x 8) $\Rightarrow$ *x* =	$\left(\frac{6}{5}\right)$	= 1.20

49. The sum of three numbers is 98. If the ratio of the first to second is 2 :3 and that of the second to the third is 5 : 8, then the second number is:

a. 20 b. 30 c. 48 d. 58
Answer: Option b
Explanation:

Let the three parts be A, B, C. Then,

A : B = 2 : 3 and B : C = 5 : 8 =	$\left(5 \text{ x } \frac{3}{5}\right)$	:	$\left(8 \text{ x } \frac{3}{5}\right)$	= 3 :	$\frac{24}{5}$	
$\Rightarrow$ A : B : C = 2 : 3 :	$\frac{24}{5}$	= 10 : 15 : 24				
$\Rightarrow$ B =	$\left(98 \text{ x } \frac{15}{49}\right)$	= 30.				

50. If Rs. 782 be divided into three parts, proportional to $\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$, then the first part is:

a. Rs. 182 b. Rs. 190 c. Rs. 196 d. Rs. 204

Answer: Option d
Explanation:

Given ratio = $\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$ = 6 : 8 : 9.

$\therefore$ 1st part = Rs. $\left(782 \times \frac{6}{}\right)$ = Rs. 204

51. It was Sunday on Jan 1, 2006. What was the day of the week Jan 1, 2010?
a. Sunday b. Saturday c. Friday d. Wednesday
Answer: Option c
Explanation:

On 31st December, 2005 it was Saturday.

Number of odd days from the year 2006 to the year 2009 = (1 + 1 + 2 + 1) = 5 days.

$\therefore$ On 31st December 2009, it was Thursday.

Thus, on 1st Jan, 2010 it is Friday.

52. What was the day of the week on 28th May, 2006?
a.Thursday b. Friday c. Saturday d. Sunday
Answer: Option d
Explanation:

28 May, 2006 = (2005 years + Period from 1.1.2006 to 28.5.2006)

Odd days in 1600 years = 0

Odd days in 400 years = 0

5 years = (4 ordinary years + 1 leap year) = (4 x 1 + 1 x 2) $\equiv$ 6 odd days

Jan. Feb. March April May (31 + 28 + 31 + 30 + 28) = 148 days

$\therefore$ 148 days = (21 weeks + 1 day) $\equiv$ 1 odd day.

Total number of odd days = (0 + 0 + 6 + 1) = 7 $\equiv$ 0 odd day.

Given day is Sunday.

53.What was the day of the week on 17th June, 1998?

a. Monday
b.Tuesday
c.Wednesday
d.Thursday
Answer: Option c
Explanation:

17th June, 1998 = (1997 years + Period from 1.1.1998 to 17.6.1998)

Odd days in 1600 years = 0

Odd days in 300 years = (5 x 3) $\equiv$ 1

97 years has 24 leap years + 73 ordinary years.

Number of odd days in 97 years (24 x 2 + 73) = 121 = 2 odd days.

Jan. Feb. March April May June (31 + 28 + 31 + 30 + 31 + 17) = 168 days

∴ 168 days = 24 weeks = 0 odd day.

Total number of odd days = (0 + 1 + 2 + 0) = 3.

Given day is Wednesday.

54. The calendar for the year 2007 will be the same for the year:
a. 2014 b.2016 c. 2017 d.2018
Answer: Option d
Explanation:

Count the number of odd days from the year 2007 onwards to get the sum equal to 0 odd day.

Year : 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 Odd day : 1 2 1 1 1 2 1 1 1 2 1

Sum = 14 odd days ≡ 0 odd days.

∴ Calendar for the year 2018 will be the same as for the year 2007.

55. **If 6th March, 2005 is Monday,** what was the day of the week on 6th March, 2004?
a. Sunday b. Saturday c. Tuesday d. Wednesday
Answer: Option a
Explanation:

The year 2004 is a leap year. So, it has 2 odd days.

But, Feb 2004 not included because we are calculating from March 2004 to March 2005. So it has 1 odd day only.

∴ The day on 6th March, 2005 will be 1 day beyond the day on 6th March, 2004.

Given that, 6th March, 2005 is Monday.

∴ 6th March, 2004 is Sunday (1 day before to 6th March, 2005).

56. Consider two Statements and a Question:
Statement-1: The last day of the month is a Wednesday.
Statement-2: The third Saturday of the month was the seventeenth day.
Question: What day is the fourteenth of the given month?
Which one of the following is correct in respect of the Statements and the Question?
(a) Statement-1 alone is sufficient to answer the Question
(b) Statement-2 alone is sufficient to answer the Question
(c) Both Statement-1 and Statement-2 are required to answer the Question
(d) Neither Statement-1 alone nor Statement-2 alone is sufficient to answer the Question
Answer: Option 2 : statement-2 alone is sufficient to answer the Question
Explanation:
According to the given question, we need to find the day of the 14th of the given month.
Statement 1: The last day of the month is a Wednesday.
If the last day is Wednesday we are not able to find a day on the 14th of that month because we don't know whether the month is of 28 days or 29 days or 30 days or 31 days.
Therefore, Statement-1 alone is not sufficient to answer the question.
Statement 2: The third Saturday of the month was the 17th day.
If the 17th day of the given month is Saturday then we can easily find the 14th day by subtracting 3 odd days from Saturday

i.e., (6 - 3) = 3. means Wednesday.
Therefore, Statement-2 alone is sufficient to answer the question.
Here we use odd days as Sunday = 0 , Monday = 1, Tuesday = 2, Wednesday = 3, Thursday = 4, Friday = 5, and Saturday = 6.

57. Mr X has three children. The birthday of the first child falls on the 5th Monday of April, that of the second one falls on the 5th Thursday of November. On which day is the birthday of his third child, which falls on20th December?
(a) Monday (b) Thursday (c) Saturday (d) Sunday
Answer: Option 2 : Thursday
5th Monday of April is possible only on two dates : 29th April or 30th April
Case 1 : 29th April Monday
No. of days from 30th April to 1st November = (1 + 31 + 30 + 31 + 31 + 30 + 31 + 1) = 186 Days
No. of odd days = 186 ÷ 7 = 26 weeks and 4 odd days
1 November = Friday 29th November and 30th November are Friday and Saturday respectively.
So, in this case 5th Thursday is not possible.
Case 2 : 30th April Monday
No. of days from 1st May to 1st November = (31 + 30 + 31 + 31 + 30 + 31 + 1) = 185 Days
No. of odd days = 185 ÷ 7 = 26 weeks and 3 odd days
So, 1st November will be Thursday.
Therefore, 29th November will be 5th Thursday.
Birthday of second child is on 29th November.

58. On what dates of April, 2001 did Wednesday fall?

a. 1^{st}, 8^{th}, 15^{th}, 22^{nd}, 29^{th} b. 2^{nd}, 9^{th}, 16^{th}, 23^{rd}, 30^{th}
c. 3^{rd}, 10^{th}, 17^{th}, 24^{th} d. 4^{th}, 11^{th}, 18^{th}, 25^{th}
Answer: Option d
Explanation:
We shall find the day on 1^{st} April, 2001.

1^{st} April, 2001 = (2000 years + Period from 1.1.2001 to 1.4.2001)

Odd days in 1600 years = 0

Odd days in 400 years = 0

Jan. Feb. March April

(31 + 28 + 31 + 1) = 91 days $\equiv$ 0 odd days.

Total number of odd days = (0 + 0 + 0) = 0

On 1^{st} April, 2001 it was Sunday.

In April, 2001 Wednesday falls on 4^{th}, 11^{th}, 18^{th} and 25^{th}.

59.Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is:
a. 1 : 3 b. 3 : 2 c. 3 : 4 d. None of these
Answer: Option b
Explanation:

Let the speeds of the two trains be x m/sec and y m/sec respectively.

Then, length of the first train = $27x$ metres,

and length of the second train = $17y$ metres.

$$\therefore \frac{27x + 17y}{x + y} = 23$$

$$\Rightarrow 27x + 17y = 23x + 23y$$

$$\Rightarrow 4x = 6y$$

$$\Rightarrow x = 3.$$

$y \quad 2$

60. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, what is the length of the platform?

a. 120 m b. 240 m c. 300 m d. None of these

Answer: Option b

Explanation:

Speed = $\left(54 \times \frac{5}{18}\right)$ m/sec = 15 m/sec.

Length of the train = (15 x 20)m = 300 m.

Let the length of the platform be x metres.

Then, $\frac{x + 300}{36} = 15$

$\Rightarrow x + 300 = 540$

$\Rightarrow x = 240$ m.

61. Two, trains, one from Howrah to Patna and the other from Patna to Howrah, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is:

a. 2 : 3 b. 4 : 3 c. 6 : 7 d. 9 : 16

Answer: Option b

Explanation:

Let us name the trains as A and B. Then,

(A's speed) : (B's speed) = b : a = 16 : 9 = 4 : 3.

62. Two trains are running at 40 km/hr and 20 km/hr respectively in the same direction. Fast train completely passes a man sitting in the slower train in 5 seconds. What is the length of the fast train?

a. 23 m b. 250/9m c. 26m d. 29 m

Answer: Option

Explanation:

Relative speed = (40 - 20) km/hr = $\left(20 \times \frac{5}{18}\right)$ m/sec = $\left(\frac{50}{9}\right)$ m/sec.

$\therefore$ Length of faster train = $\left(\frac{50}{9} \times 5\right)$ m = $\frac{250}{9}$ m = $27\frac{7}{9}$ m.

63. A train overtakes two persons who are walking in the same direction in which the train is going, at the rate of 2 kmph and 4 kmph and passes them completely in 9 and 10 seconds respectively. The length of the train is:

a. 45 m b. 50 m c. 54 m d. 72 m

Answer: Option b

Explanation:

2 kmph = $\left(2 \times \frac{5}{18}\right)$ m/sec = $\frac{5}{9}$ m/sec.

4 kmph = $\left(4 \times \frac{5}{18}\right)$ m/sec = $\frac{10}{9}$ m/sec.

Let the length of the train be x metres and its speed by y m/sec.

Then,	$\frac{x}{y - \frac{5}{9}}$	= 9 and	$\frac{x}{y - \frac{10}{9}}$	= 10.

$\therefore$ $9y - 5 = x$ and $10(9y - 10) = 9x$

$\Rightarrow$ $9y - x = 5$ and $90y - 9x = 100$.

On solving, we get: $x = 50$.

$\therefore$ Length of the train is 50 m.

64.A train overtakes two persons walking along a railway track. The first one walks at 4.5 km/hr. The other one walks at 5.4 km/hr. The train needs 8.4 and 8.5 seconds respectively to overtake them. What is the speed of the train if both the persons are walking in the same direction as the train?

a. 66 km/hr b. 72 km/hr c. 78 km/hr d. 81 km/hr

Answer: Option d

Explanation:

4.5 km/hr =	$\left(4.5 \times \frac{5}{18}\right)$	m/sec =	$\frac{5}{4}$	m/sec = 1.25 m/sec, and
5.4 km/hr =	$\left(5.4 \times \frac{5}{18}\right)$	m/sec =	$\frac{3}{2}$	m/sec = 1.5 m/sec.

Let the speed of the train be x m/sec.

Then, $(x - 1.25) \times 8.4 = (x - 1.5) \times 8.5$

$\Rightarrow$ $8.4x - 10.5 = 8.5x - 12.75$

$\Rightarrow$ $0.1x = 2.25$

$\Rightarrow$ $x = 22.5$

$\therefore$ Speed of the train =	$\left(22.5 \times \frac{18}{5}\right)$	km/hr = 81 km/hr.

Directions to Solve (Question 65 to 68)

The following questions are based on the information given below:

1. All the faces of cubes are painted with red colour.
2. The cubes is cut into 64 equal small cubes.

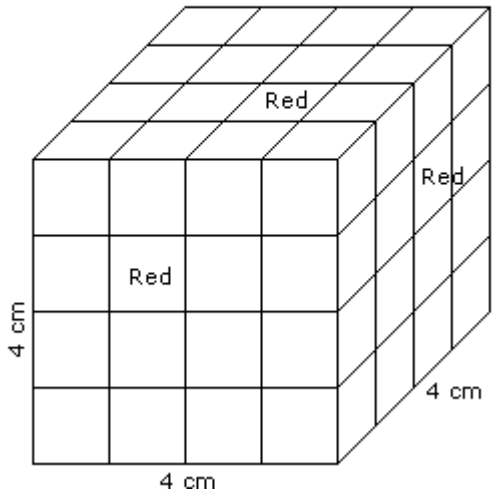
65. How many small cubes have only one face coloured ?

a. 4b. 8 c. 16 d. 24 **Answer:** Option

Explanation: d

There are 64 small cubes.

Hence one side of the big cube $= \sqrt[3]{64} = 4\,cm.$



Number of small cubes having only one face coloured = $(x - 2)^2$ x No. of faces

= $(4 - 2)^2$ x 6

= 24

66.How many small cubes have no faces coloured ?

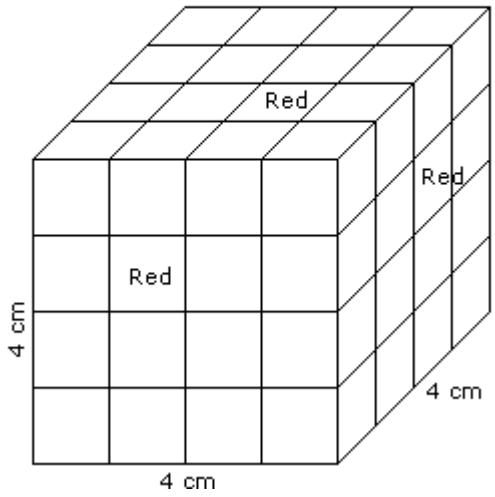
a. 24 b. 8 c. 16 d. 0

Answer: Option

Explanation: b

There are 64 small cubes.

Hence one side of the big cube $= \sqrt[3]{64} = 4\,cm.$



Number of small cubes having only one faces coloured = $(x - 2)^3$

Here, x = side of big cube / side of small cube

x = 4 /1

x = 4

Required number = $(4-2)^3$

= 8

67. How many small cubes are there whose three faces are coloured ?

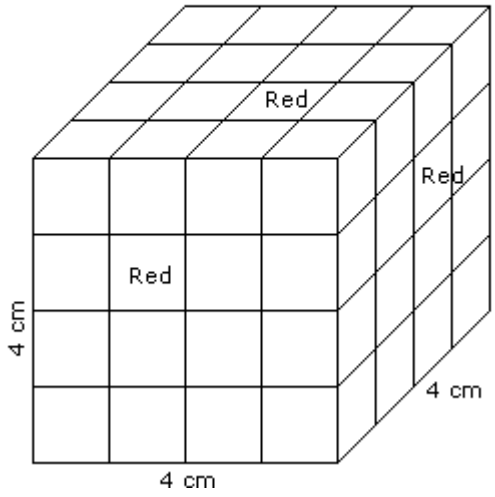
a. 4b. 8 c. 16 d.24

Answer: Option b

Explanation:

There are 64 small cubes.

Hence one side of the big cube $= \sqrt[3]{64} = 4\,\text{cm}.$



Number of small cubes having three faces coloured = No. of corners = 8

68.How many small cubes are there whose two adjacent faces are coloured red ?

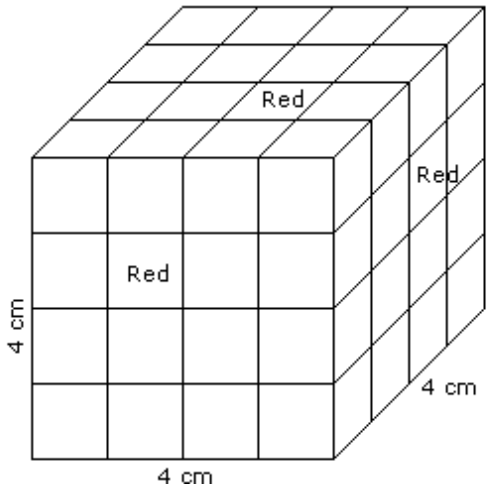
a. 0 b. 8 c. 16 d. 24

Answer: Option

Explanation: d

There are 64 small cubes.

Hence one side of the big cube $= \sqrt[3]{64} = 4\,\text{cm}.$



Number of small cubes having two adjacent faces coloured red = (x - 2) x No. of edges

= (4 - 2) x 12

= 24

69. A solid cube is painted yellow, blue and black such that opposite faces are of same colour. The cube is then cut into 36 cubes of two different sizes such that 32 cubes are small and the other four cubes are big. None of the faces of the bigger cubes is painted blue. How many cubes have only one face painted?
(a) 4 (b) 6 (c) 8 (d) 10
Answer: option is (c) 8
Explanation:

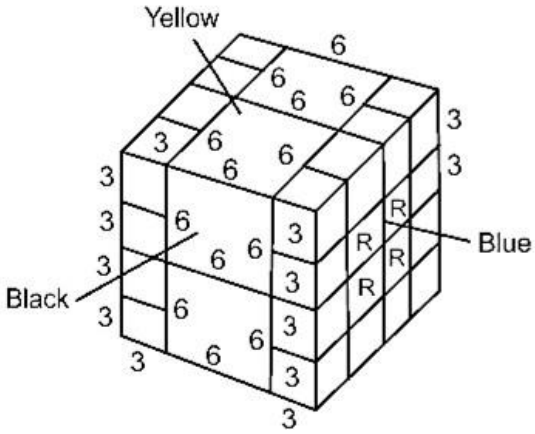
Let the each side of original cube be 12 units.

According to the question, the cube is cut into 36 cubes such that 32 cubes are small and 4 cubes are big.

Each of 32 small cubes will have sides of 3 units.

Each of 4 big cubes will have sides of 6 units each. None of the faces of big cube is painted blue.

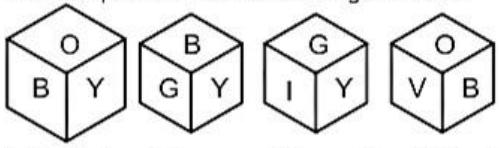
This arrangement can be shown with the help of following diagram :



Number of cubes have only one face painted = 2 × 4 = 8

70. Each of the six different faces of a cube has been coated with a different colour i.e., V, I, B, G, Y and O.
Following information is given :
1. Colours Y, O and B are on adjacent faces.
2. Colours I, G and Y are on adjacent faces.
3. Colours B, G and Y are on adjacent faces.
4. Colours O, V and B are on adjacent faces.
Which is the colour of the face opposite to the face coloured with O?
(a) B (b) V (c) G (d) I
Answer: Option c : G
Explanation:

The dice positions based on the given data:



In the first and the second image O and G both are adjacent to B and Y. Implies, both O and G must be on opposite faces.

Hence, G is opposite O.

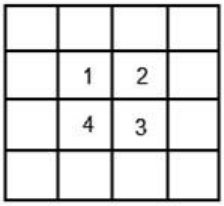
71. A cube has all its faces painted with different colours. It is cut into smaller cubes of equal sizes such that the side of the small cube is one-fourth the big cube. The number of small cubes with only one of the sides painted is

(a) 32 (b) 24 (c) 16 (d) 8

Answer: Option B :24

Explanation:

Each face of the cube will look like the figure below:



On each face, the smaller cubes which don't lie on the edges of bigger cube will have only one side painted. As shown in the figure above, there are four cubes which has only one face painted. Accordingly, there will be 6 such faces of bigger cube. So, total 24 small cubes have one painted face.

Hence, **24** is the correct answer.

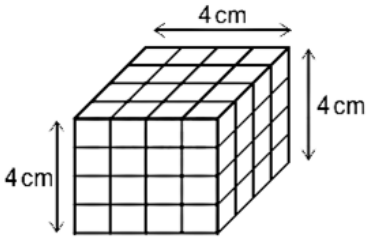
72.The outer surface of a 4 cm × 4 cm x 4 cm cube is painted completely in red. It is sliced parallel to the faces to yield sixty four 1 cm x 1 cm x 1 cm small cubes. How many small cubes do not have painted faces?

(a) 8 (b) 16 (c) 24 (d) 36

Answer: Option a : 8

Explanation:

The original cube is cut into 64 cubes as :



There are 4 layers one above the other having 16 cubes each .

1st Layer : It has all the cubes painted. So, no. of unpainted cubes = 0

2nd Layer : Cubes that are part of faces of big cube are painted. So, no. of unpainted cubes = 4

3rd Layer : Cubes that are part of faces of big cube are painted. So, no. of unpainted cubes = 4

4th Layer : It has all the cubes painted. So, no. of unpainted cubes = 0

Total no. of cubes which do not have painted face = 8

Hence, **option 1** is the correct answer.

73. Suppose the average weight of 9 persons is 50 kg. The average weight of the first 5 persons is 45 kg, whereas the average weight of the last 5 persons is 55 kg. Then the weight of the 5th person will be

(a) 45 kg (b) 47.5 kg (c) 50 kg (d) 52.5 kg

Answer: option (c) 50 kg

Explanation:

The average weight of 9 persons is 50 kg.
So, total weight of all the persons = 50 × 9 = 450 kg
The average weight of the first 5 persons is 45 kg.
So, their total weight = 45 × 5 = 225 kg
The average weight of the last 5 persons is 55 kg.
So, their total weight = 55 × 5 = 275 kg
The fifth person has been included in both the last cases.
Hence, the weight of the fifth person = (275 + 225) – 450 = 50 kg

74.A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?

b. 1/3 **b. ¼** **c. 1/5** **d. 1/8**

Answer: Option b

Explanation:

Suppose the vessel initially contains 8 litres of liquid.

Let x litres of this liquid be replaced with water.

Quantity of water in new mixture =	$\left(3 - \frac{3x}{8} + x\right)$ litres
Quantity of syrup in new mixture =	$\left(5 - \frac{5x}{8}\right)$ litres

$\therefore \left(3 - \frac{3x}{8} + x\right) = \left(5 - \frac{5x}{8}\right)$

$\Rightarrow 5x + 24 = 40 - 5x$

$\Rightarrow 10x = 16$

$\Rightarrow x = \frac{8}{5}$

So, part of the mixture replaced = $\left(\frac{8}{5} \times \frac{1}{8}\right) = \frac{1}{5}$.

75. Tea worth Rs. 126 per kg and Rs. 135 per kg are mixed with a third variety in the ratio 1 : 1 : 2. If the mixture is worth Rs. 153 per kg, the price of the third variety per kg will be:

a.Rs. 169.50 b. Rs. 170 c. Rs. 175.50 d. Rs. 180

Answer: Option c

Explanation:

Since first and second varieties are mixed in equal proportions.

So, their average price = Rs. $\left(\frac{126 + 135}{2}\right)$ = Rs. 130.50

So, the mixture is formed by mixing two varieties, one at Rs. 130.50 per kg and the other at say, Rs. x per kg in the ratio 2 : 2, *i.e.,* 1 : 1. We have to find x.

By the rule of alligation, we have:

Cost of 1 kg of 1st kind		Cost of 1 kg tea of 2nd kind
Rs. 130.50	Mean Price Rs. 153	Rs. x
$(x - 153)$		22.50

$\therefore \frac{x - 153}{22.50} = 1$

$\Rightarrow x - 153 = 22.50$

$\Rightarrow x = 175.50$

76. A milk vendor has 2 cans of milk. The first contains 25% water and the rest milk. The second contains 50% water. How much milk should he mix from each of the containers so as to get 12 litres of milk such that the ratio of water to milk is 3 : 5?

a. 4 litres, 8 litres b. 5 litres, 7 litres c. 6 litres, 6 litres d. 7 litres, 5 litres

Answer: Option

Explanation: c

Let the cost of 1 litre milk be Re. 1

Milk in 1 litre mix. in 1st can =	$\frac{3}{4}$	litre, C.P. of 1 litre mix. in 1st can Re.	$\frac{3}{4}$
Milk in 1 litre mix. in 2nd can =	$\frac{1}{2}$	litre, C.P. of 1 litre mix. in 2nd can Re.	$\frac{1}{2}$
Milk in 1 litre of final mix. =	$\frac{5}{8}$	litre, Mean price = Re.	$\frac{5}{8}$

By the rule of alligation, we have:

C.P. of 1 litre mixture in 1st can		C.P. of 1 litre mixture in 2nd can
$\frac{3}{4}$	Mean Price $\frac{5}{8}$	$\frac{1}{2}$
$\frac{1}{8}$		$\frac{1}{8}$

$\therefore$ Ratio of two mixtures = $\frac{1}{8} : \frac{1}{8}$ = 1 : 1.

So, quantity of mixture taken from each can = $\left(\frac{1}{2} \times 12\right)$ = 6 litres.

77. In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg respectively so as to get a mixture worth Rs. 16.50 kg?

a. 3 : 7 b. 5 : 7 c. 7 : 3 d.7 : 5

Answer: Option c

Explanation:

By the rule of alligation:

Cost of 1 kg pulses of 1st kind		Cost of 1 kg pulses of 2nd kind
Rs. 15	Mean Price Rs. 16.50	Rs. 20
3.50		1.50

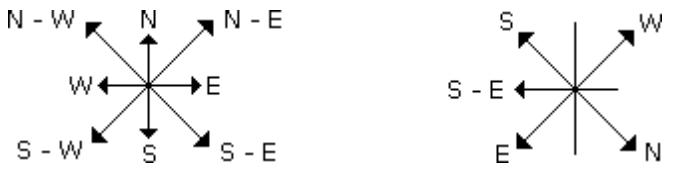
$\therefore$ Required rate = 3.50 : 1.50 = 7 : 3.

78. If South-East becomes North, North-East becomes West and so on. What will West become?

a. North-East b. North-West c. South-East d.South-West

Answer: Option c

Explanation:



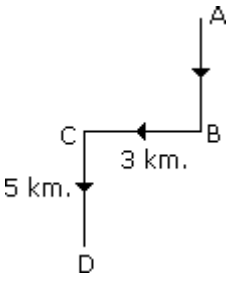
It is clear from the diagrams that new name of West will become South-East.

79. A man walks 5 km toward south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. Now in which direction is he from the starting place?

a. West b. South c. North-East d. South-West

Answer: Option d

Explanation:



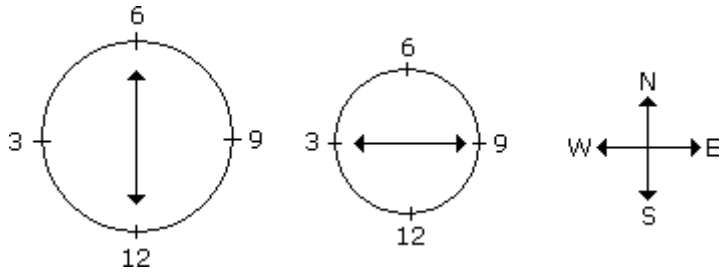
Hence required direction is South-West.

80. Rahul put his timepiece on the table in such a way that at 6 P.M. hour hand points to North. In which direction the minute hand will point at 9.15 P.M. ?

a. South-East b. South c. North d. West

Answer: Option d

Explanation:



At 9.15 P.M., the minute hand will point towards west.

Question 81 to 85

In an Exhibition seven cars of different companies - Cadillac, Ambassador, Fiat, Maruti, Mercedes, Bedford and Fargo are standing facing to east in the following order :

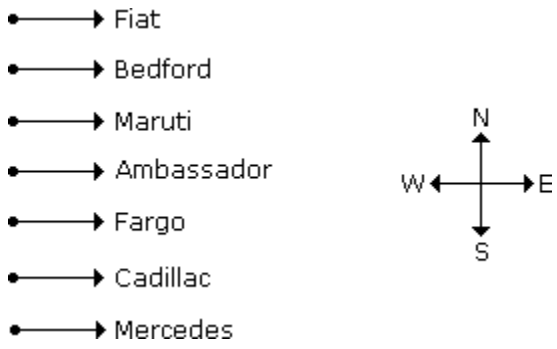
5. Cadillac is next to right of Fargo.
6. Fargo is fourth to the right of Fiat.
7. Maruti car is between Ambassador and Bedford.
8. Fiat which is third to the left of Ambassador, is at one end.

81. Which of the cars are on both the sides of cadillac car ?

a. Ambassador and Maruti b. Maruti and Fiat
c. Fargo and Mercedes d. Ambassador and Fargo

Answer: Option c

Explanation:

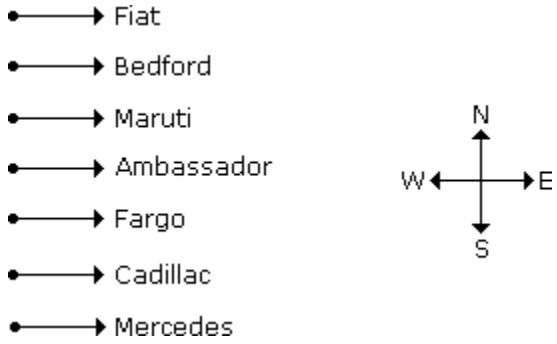


Fargo and Mercedes are on both the sides of cadillac car.

82. Which of the following statement is correct ?

a. Bedford is next left of Fiat. b. Bedford is at one end.
c. Maruti is next left of Ambassador. d. Fiat is next second to the right of Maruti.

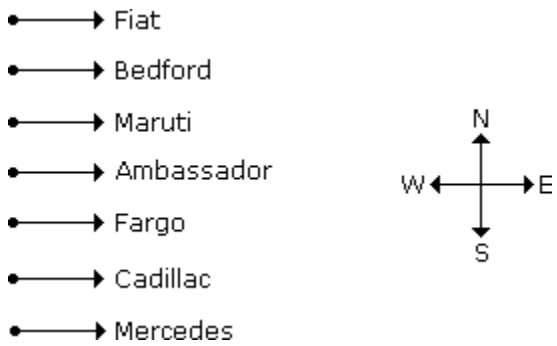
Answer: Option c
Explanation:



Therefore, Maruti is next left of Ambassador.

83. Which one of the following statements is correct ?
a. Fargo car is in between Ambassador and Fiat. b. Fargo is next right of Cadillac.
c.Cadillac is next left to Mercedes car. d. Maruti is fourth right of Mercedes.

Answer: Option c
Explanation:

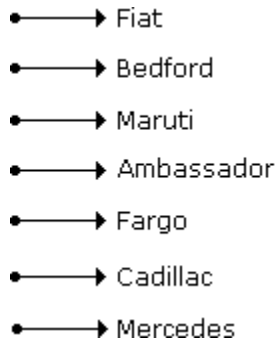


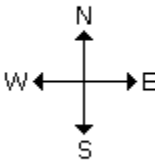
Therefore, Cadillac is next left to Mercedes car.

84.Which of the following groups of cars is to the right of Ambassador ?

a. Cadillac, Fargo and Maruti b. Maruti, Bedford and Fiat
c.Mercedes, Cadillac and Fargo d. Bedford, Cadillac and Fargo

Answer: Option c
Explanation:



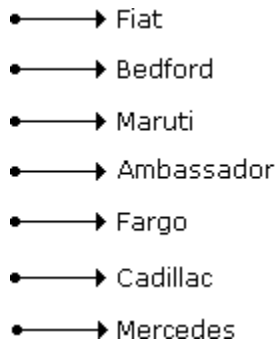


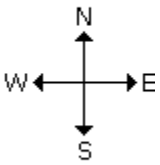
Mercedes, Cadillac and Fargo cars are to the right of Ambassador.

85. Which one of the following is the correct position of Mercedes ?

a. Next to the left of Cadillac b. Next to the left of Bedford
c. Between Bedford and Fargo d. Fourth to the right of Maruti.

Answer: Option d
Explanation:





The correct position of Mercedes is fourth to the right of Maruti.

Fill in the blanks (Q.86 to Q.90)

86.John is_____the grocery store.
a. at b. in c. on d. None
Ans- a

87.Mary is reading a book_____the library.
a. in b. on c. onto d. at
Ans- a

88.Jason will be back_____an hour.
a. in b. on c. onto d. at
Ans- a

89.Linda is sitting_____the park bench.
a. on b. from c. onto d. at
Ans-a

90.A letter_____Jane arrived today.
a. from b. on c. onto d. at
Ans-a

91. Find the Antonyms of surrender
a. abandon b. relinquish c. resign d. None
Ans- d

92. Find the antonyms of adjacent
a. contiguous b. along c. beside d. None

Ans- d

93. The ratio of the number of boys and girls in a college is 7 : 8. If the percentage increase in the number of boys and girls be 20% and 10% respectively, what will be the new ratio?

a. 8 : 9 b. 17 : 18 c. 21 : 22 d. Cannot be determined

Answer: Option c

Explanation:

Originally, let the number of boys and girls in the college be $7x$ and $8x$ respectively.

Their increased number is (120% of $7x$) and (110% of $8x$).

$\Rightarrow \left(\frac{120}{100} \times 7x\right)$ and $\left(\frac{110}{100} \times 8x\right)$

$\Rightarrow \frac{42x}{5}$ and $\frac{44x}{5}$

$\therefore$ The required ratio = $\frac{42x}{5} : \frac{44x}{5}$ = 21 : 22.

94. Salaries of Ravi and Sumit are in the ratio 2 : 3. If the salary of each is increased by Rs. 4000, the new ratio becomes 40 : 57. What is Sumit's salary?

a.Rs. 17,000 b. Rs. 20,000 c. Rs. 25,500 d. Rs. 38,000

Answer: Option d

Explanation:

Let the original salaries of Ravi and Sumit be Rs. $2x$ and Rs. $3x$ respectively.

Then, $\frac{2x + 4000}{3x + 4000} = \frac{40}{57}$

$\Rightarrow 57(2x + 4000) = 40(3x + 4000)$

$\Rightarrow 6x = 68,000$

$\Rightarrow 3x = 34,000$

Sumit's present salary = $(3x + 4000)$ = Rs.(34000 + 4000) = Rs. 38,000.

95. If 0.75 : x :: 5 : 8, then x is equal to:

a.1.12 b.1.20 c. 1.25 d. 1.30

Answer: Option b

Explanation:

$(x \times 5) = (0.75 \times 8) \Rightarrow x = \frac{6}{5}$ = 1.20

96. The sum of three numbers is 98. If the ratio of the first to second is 2 :3 and that of the second to the third is 5 : 8, then the second number is:

a. 20 b. 30 c. 48 d. 58

Answer: Option b

Explanation:

Let the three parts be A, B, C. Then,

A : B = 2 : 3 and B : C = 5 : 8 = $\left(5 \times \frac{3}{5}\right) : \left(8 \times \frac{3}{5}\right) = 3 : \frac{24}{5}$

$\Rightarrow$ A : B : C = 2 : 3 : 24 = 10 : 15 : 24

$$\Rightarrow B = \left(98 \times \frac{15}{49}\right) = 30.$$

97. If Rs. 782 be divided into three parts, proportional to $\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$, then the first part is:

a. Rs. 182 b. Rs. 190 c. Rs. 196 d. Rs. 204

Answer: Option d

Explanation:

Given ratio = $\frac{1}{2} : \frac{2}{3} : \frac{3}{4} = 6 : 8 : 9.$

$$\therefore \text{ 1st part} = \text{Rs.} \left(782 \times \frac{6}{}\right) = \text{Rs. } 204$$

98. It was Sunday on Jan 1, 2006. What was the day of the week Jan 1, 2010?

a. Sunday b. Saturday c. Friday d. Wednesday

Answer: Option c

Explanation:

On 31st December, 2005 it was Saturday.

Number of odd days from the year 2006 to the year 2009 = (1 + 1 + 2 + 1) = 5 days.

$\therefore$ On 31st December 2009, it was Thursday.

Thus, on 1st Jan, 2010 it is Friday.

99. There are 5 tasks and 5 persons. Task-1 cannot be assigned to either person-1. or person-2. Task-2 must be assigned to either person-3 or person-4. Every person is to be assigned one task. In how many ways can the assignment be done?

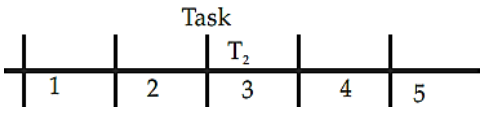
(a) 6 (b) 12 (c) 24 (d) 144

Answer: Option(c)

Explanation:

Here are five persons, and 5 tasks

So, When T2 task is fixed for person 3



For Task 1 no. of ways = 2

Task 2 no. of ways = 1

Task 3 no. of ways = 3

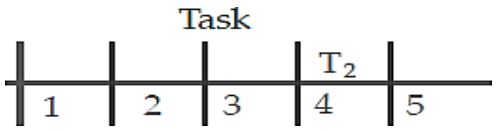
Task 4 no. of ways = 3

Task 5 no. of ways = 3

Total no. of ways for condition = 3 + 3 + 3 + 2 + 1 = 12

Condition II

When task T2 is given to be person 4



No. of ways for Task T1 = 2

No. of ways for Task T2 = 1

No. of ways for Task T3 = 3

No. of ways for Task T4 = 3

No. of ways for Task T5 = 3

Total number of ways for condition II = 3 + 3 + 3 + 2 +1 = 12

Total number of ways for condition I and II = 12 + 12 = 24

100. Suppose you have sufficient amount of rupee currency in three denominations: Rs. 1, Rs.10 and Rs.50. In how many different ways can you pay a bill of Rs.107?
(a) 16 (b) 17 (c) 18 (d) 19

Answer: option is (c) 18

Explanation: Number of Denominations are: Rs. 50 Rs. 10 Rs. 1

Number of Denominations are shown in the table:

Rs. 50	Rs. 10	Rs. 1	Number of ways
2	0	7	1
1	(0 - 5)	(7 - 57)	6
0	(0 - 10)	(7 - 107)	11

Total number of ways = 1 + 6 + 11 = 18.