CAREERS 360

PREPARATION Series

Arithmatical Problems

All Questions with Solutions

Q. 1 **Directions:** The average temperature of the town in the first six days of a month was 41° C and the sum of the temperatures of the first five days of the same month was 201° C. What was the temperature on the sixth day of the month?

Option 1:
40° C

Option 2:
45° C

Option 3:
46° C

Option 4:
50° C

Correct Answer:
45° C

Solution:
Average temperature of the first six days of the month = 41° C
The sum of the temperatures of 6 days = Average temperature × Number of days = 41 × 6 = 246° C
But, the sum of the temperatures of the first five days = 201° C
So, 201 + (temperature of the sixth day) = 246° C
The temperature of the sixth day = 246 – 201 = 45° C

Hence, the **second option** is correct.

Q. 2 **Directions:** The average age of the present ages of Amit and Anil is 32 years. If Amit is 6 years older than Anil, What is Anil's present age?

Option 1:
38 years

Option 2:
26 years

Option 3:
19 years

Option 4:
29 years

Correct Answer:
29 years

Solution:
Given:
The average age of the present ages of Amit and Anil = 32 years

Let Anil's present age be x years.
So, Amit's present age = (x + 6) years
The average age of the present ages of Amit and Anil is 32 years
$\Rightarrow x + x + 6 = 32 \times 2$
$\Rightarrow 2x + 6 = 64$
$\Rightarrow x = 29$

So, Anil's present age is 29 years. Hence, the **fourth option** is correct.

Q. 3 **Directions:** The average age of 19 boys in a class is 21 years. If the teacher's age is included, the average increases to 22 years. What is the teacher's age?

Option 1:
39 years

Option 2:
41 years

Option 3:
40 years

Option 4:
44 years

Correct Answer:
41 years

Solution:
Given:
The average age of 19 boys in a class is 21 years.

Average⇒(Sum of ages of 19 boys) ÷ 19 = 21
So, the sum of the ages of 19 boys = 19 × 21 = 399

The average age of 19 boys and the teacher is 22 years.
Average (including teacher's age)⇒(Sum of ages of 19 boys + Age of the teacher) ÷ 20 = 22
⇒(Sum of ages of 19 boys + Age of the teacher) = 22 × 20 = 440
Substitute the sum of the ages of 19 boys by 399 (calculated above)
⇒399 + (Age of the teacher) = 22 × 20 = 440
⇒Age of the teacher = 440 – 399 = 41 years

So, the age of the teacher is 41 years. Hence, the **second option** is correct.

Q. 4 **Directions:** The total of the ages of four persons is 86 years. What was their average age 4 years ago?

Option 1:
20.5 Years

Option 2:
19.5 Years

Option 3:
20 Years

Option 4:
17.5 Years

Correct Answer:
17.5 Years

Solution:
Given:
The total of the ages of four persons is 86 years.
Average = (Sum of elements) ÷ (Number of elements)

Let the age of four persons are = A, B, C, D
A + B + C + D = 86
Average age 4 years ago –
A + B + C + D = (86 – 4 × 4) ÷ 4
A + B + C + D = 70 ÷ 4
A + B + C + D = 17.5

So, the average age 4 years ago is 17.5. Hence, the **fourth option** is correct.

Q. 5 **Directions:** The mean weight of 8 students is 57 kg. The weight of each student is 55 kg, 49 kg, 57 kg, 63 kg, 68 kg, 52 kg, X kg, and Y kg. What is the sum of X and Y?

Option 1:
116 kg

Option 2:
112 kg

Option 3:
110 kg

Option 4:
114 kg

Correct Answer:
112 kg

Solution:
Given:
The mean weight of 8 students = 57 kg

⇒The sum of the weight of 8 students = Mean weight of 8 students × number of students = 57 × 8 = 456
⇒The sum of weight of each student = (55 + 49 + 57 + 63 + 68 + 52 + X + Y)kg
⇒55 + 49 + 57 + 63 + 68 + 52 + X + Y = 456
344 + X + Y = 456
X + Y = 456 – 344
X + Y = 112

So, the sum of X and Y is 112 kg. Hence, the **second option** is correct.

Q. 6 **Directions:** The average income of six friends A, B, C, D, E, and F is INR 6,500. The total income of B, D, E, and F is INR 25,000. If A 's income is INR 4,000 less than C's income, then what is the income of C?

Option 1:
INR 10,000

Option 2:
INR 9,000

Option 3:
INR 7,000

Option 4:
INR 8,000

Correct Answer:
INR 9,000

Solution:
(I) The average income of six friends A, B, C, D, E, and F is INR 6,500
The average income of six friends = 6,500 (Average = Total number of observations divided by number of observations)
Total income of six friends = Average × 6
Total income = (A + B + C + D + E + F) × 6 = 6,500 × 6 = 39,000

(II) The total income of B, D, E, and F is INR 25,000.
B + D + E + F = 25,000
(A + B + C + D + E + F) – (B + D + E + F) = 39,000 – 25,000 = 14,000
Thus, (A + C) income = 14,000

(III) If A's income is INR 4,000 less than C's income.
Let C's income be X; A's income be (X – 4000)
X + (X – 4000) = 14,000
2X – 4000 = 14,000
2X = 14,000 + 4000
2X = 18,000; X = 9,000

So, C's income is INR 9,000. Hence, the **second option** is correct.

Q. 7 **Directions:** The present ages of Ankur and his sister are in the ratio of 4:3. After 6 years, the ratio of Ankur's sister and brother will be 3:2. If the present age of his brother is 32 years, what will be the age (in years) of Ankur after 3 years?

Option 1:
71

Option 2:
68

Option 3:
70

Option 4:
65

Correct Answer:
71

Solution:
Given:
The present age of Ankur's brother is 32 years.
⇒ His age 6 years later = 38 years

But, after 6 years the ratio of ages of Ankur's sister and brother will be 3:2.
After 6 years, Ankur's sister's age = 3A, Ankur's brother's age = 2A
⇒ 2A = 38
⇒ A = 38 ÷ 2 = 19
⇒ Ankur's sister's age 6 years later = 57 years
⇒ Ankur's sister's present age→57 – 6 = 51 years

But, the present ages of Ankur and his sister are in the ratio of 4:3.
Ankur's sister's present age = 3A, Ankur's present age = 4A
⇒ Ankur's sister's present age→57 – 6 = 51 years
⇒ 3A = 51
⇒ A = 51 ÷ 3 = 17
⇒ Ankur's present age = 4 × 17 = 68 years

Ankur's age after 3 years will be 71 years. Hence, the **first option** is correct.

Q. 8 **Directions:** The present age of A is two times the present age of B. After 8 years, B's age will be four times C's present age. If 9 years ago, C celebrated his fifth birthday, then what is the present age (in years) of A?

Option 1:
88

Option 2:
96

Option 3:
92

Option 4:
84

Correct Answer:
96

Solution:

Let the present age of C be x years.
Since 9 years ago, C celebrated his 5th birthday
⇒ x – 9 = 5
⇒ x = 5 + 9
⇒ x = 14 years
So, C's present age is 14 years.
Also, after 8 years, the B's age will be 4 times that of C's present age.
So, B's present age is –
⇒ (14 × 4) – 8 = 56 – 8 = 48
Since A's present age is twice B's present age, A's present age is 48 × 2 = 96 years.

Hence, the **second option** is correct.

Q. 9 **Directions:** The ratio between the present ages of Pankaj and Punit is 5 : 6, and the sum of their ages is 33 years. What will be the difference (in years) of their ages?

Option 1:
2

Option 2:
3

Option 3:
4

Option 4:
5

Correct Answer:
3

Solution:
Given:
The ratio of the present ages of Pankaj and Punit is 5 : 6 and the sum of their ages is 33 years.

Let the present ages of Pankaj and Punit be 5y and 6y.

According to the question –

⇒ 5y + 6y = 33

⇒ 11y = 33

⇒ y = 33 ÷ 11

⇒ y = 3

Therefore,

Present age of Pankaj = 5y = 5 × 3 = 15 years

Present age of Punit = 6y = 6 × 3 = 18 years

Difference = 18 – 15 = 3 years

Hence, the **second option** is correct.

Q. 10 **Directions:** 5 years hence, the ratio of ages of A and B will be 7 : 5 and the difference between their ages will be 4 years. What are the present ages (in years) of A and B respectively?

Option 1:
5, 9

Option 2:
6, 5

Option 3:
9, 5

Option 4:
9, 6

Correct Answer:
9, 5

Solution:

Given:

The ratio of ages of A and B after 5 years = 7 : 5

Difference between their ages = 4 years

Let the ratio of ages of A and B after five years be 7y and 5y

According to the question –

⇒ 7y – 5y = 4

⇒ 2y = 4

⇒ y = 4 ÷ 2

⇒ y = 2

Therefore,

Present age of A = 7y – 5 = (7 × 2) – 5 = 14 – 5 = 9 years

Present age of B = 5y – 5 = (5 × 2) – 5 = 10 – 5 = 5 years

Hence, the **third option** is correct.

Q. 11 **Directions:** The ratio of the present ages of P and Q is 5 : 8. Three years later their ages will be in the ratio 8 : 11. What is the present age (in years) of Q?

Option 1:
5

Option 2:
11

Option 3:
14

Option 4:
8

Correct Answer:
8

Solution:

Given:

The ratio of the present ages of P and Q is 5 : 8.

Let the present age of P be 5y and the present age of Q be 8y.

Age of P after 3 years = 5y + 3

Age of Q after 3 years = 8y + 3

The ratio of their ages after 3 years is 8 : 11

⇒ $\frac{5y+3}{8y+3} = \frac{8}{11}$

⇒ 11 × (5y + 3) = 8 × (8y + 3)

⇒ 55y + 33 = 64y + 24
⇒ 64y – 55y = 33 – 24
⇒ 9y = 9
⇒ y = 1

So, Q's present age = 8y = 8 × 1 = 8 years. Hence, the **fourth option** is correct.

Q. 12 **Directions:** The ratio of the present ages of Aman and Ankit is 2 : 1 and the sum of their present ages is 72 years. What will be Aman's age (in years) after 6 years?

Option 1:
30

Option 2:
48

Option 3:
52

Option 4:
54

Correct Answer:
54

Solution:
Given:
The ratio of the present ages of Aman and Ankit is 2 : 1.

Let Aman's present age be 2y and Ankit's present age be y.
The sum of their present ages is 72 years.
⇒ 2y + y = 72
⇒ 3y = 72
⇒ y = 24
Aman's present age = 2 × 24 = 48 years
Aman's age after 6 years = 48 + 6 = 54 years.

Hence, the **fourth option** is correct.

Q. 13 **Directions:** The ratio of present ages of L and N is 7 : 5. If the age of N after seven years will be 32 years, then what is the present age (in years) of L?

Option 1:
49

Option 2:
35

Option 3:
28

Option 4:
42

Correct Answer:
35

Solution:
Given:
The ratio of present ages of L and N is 7 : 5

Let L's present age be 7y and N's present age be 5y.
The age of N after seven years will be 32 years.
⇒ 5y + 7 = 32
⇒ 5y = 25
⇒ y = 5
Therefore, L's present age = 7y = 7 × 5 = 35 years.

Hence, the **second option** is correct.

Q. 14 **Directions:** If the age of Rahul is 5 years more than his friend Ajay's age, the age of Rahul's wife is 6 years less than Rahul's, and Ajay's wife is 1 year older than Rahul's wife, then which of the following statements is true?

Option 1:
Rahul's age and Ajay's wife's age are the same

Option 2:
Ajay's wife's age and Ajay's age are the same

Option 3:
Rahul and Ajay are of the same age

Option 4:
Rahul's and Ajay's age difference is 3 years

Correct Answer:
Ajay's wife's age and Ajay's age are the same

Solution:
Given:
Let Ajay's age be x years.
Rahul's age = x + 5 years
Rahul's wife's age = x + 5 – 6 = x – 1 years
Ajay's wife's age = x – 1 + 1 = x years

Let's check the options –
First option: Rahul's age and Ajay's wife's age are the same;
Rahul's age = x + 5 years, and Ajay's wife's age = x years. So, their age is not the same.
Second option: Ajay's wife's age and Ajay's age are the same;
Ajay's wife's age = x years, and Ajay's age = x years. So, both of them have the same age.
Third option: Rahul and Ajay are of the same age;
Rahul's age = x + 5 years, Ajay's age = x years. So, their age is not the same.
Fourth option: Rahul's and Ajay's age difference is 3 years;
Rahul's age = x + 5 years, Ajay's age = x years. Their age difference is 5 years.

So, only the statement of the second option is true. Hence, the **second option** is correct.

Q. 15 **Directions:** The total age of a mother and her daughter is 60 years. The difference between their ages is 30 years. Find out the age of the mother.

Option 1:
55 years

Option 2:
40 years

Option 3:
45 years

Option 4:
50 years

Correct Answer:
45 years

Solution:
Let the age of the mother be A years and the daughter be B years.
Then, A + B = 60 years
A – B = 30 years
Solving the above two equations,
⇒ 2A = 90
⇒ A = 90 ÷ 2 = 45
⇒ A = 45 years

So, the age of the mother is 45 years. Hence, the **third option** is correct.

Q. 16 **Directions:** The age of the father is twice that of the elder son. After ten years, the age of the father will be three times that of the younger son. If the difference in ages of the two sons is 15 years, the age of the father is?

Option 1:
70 years

Option 2:
55 years

Option 3:
50 years

Option 4:
60 years

Correct Answer:
50 years

Solution:
Let the present age of the elder son be y years, then the father's present age will be 2y years.
Ten years later, the father's age = 2y + 10, and that is 3 times that of the younger son.
So, 10 years later, the younger son's age is $\frac{2y+10}{3}$.
The age difference between the two sons is 15 years.
$\Rightarrow (y+10)-(\frac{2y+10}{3})=15$
$\Rightarrow y-(\frac{2y+10}{3})=5$
Now, multiply the given equation by 3 –
⇒ 3y – (2y + 10) = 15
⇒ 3y – 2y – 10 = 15
⇒ y = 15 + 10 = 25
The age of the father is 25 × 2 = 50 years.

So, the age of the father is 50 years. Hence, the **third option** is correct.

Q. 17 **Directions:** The present ages of Vikas and Sujit are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Sujit's present age in years?

Option 1:
6

Option 2:
24

Option 3:
18

Option 4:
27

Correct Answer:
24

Solution:
Given:
The present ages of Vikas and Sujit are in the ratio of 5 : 4
⇒ Present age of Vikas = 5 × A
⇒ Present age of Sujit = 4 × A
Age of Vikas after 3 years = (5 × A) + 3
Age of Sujit after 3 years = (4 × A) + 3
The ratio of their ages after 3 years is 11 : 9
⇒ $\frac{(5\times A)+3}{(4\times A)+3}=\frac{11}{9}$
⇒ 9 × ((5 × A) + 3) = 11 × ((4 × A) + 3)
⇒ (45 × A) + 27 = (44 × A) + 33
⇒ A = 6 years
Therefore, Sujit's present age = 4 × A = 4 × 6 = 24 years.

Hence, the **second option** is correct.

Q. 18 **Directions:** The ratio of present ages of A and B is 5 : 7. If the age of B after 10 years is 31 years, then what is the present age (in years) of A?

Option 1:
10

Option 2:
15

Option 3:
25

Option 4:
35

Correct Answer:
15

Solution:
Given:
The ratio of present ages of A and B is 5 : 7
⇒A's present age = 5 × Y
⇒B's present age = 7 × Y
The age of B after 10 years is 31 years,
⇒(7 × Y) + 10 = 31
⇒(7 × Y) = 31 – 10 = 21
⇒Y = 21 ÷ 7 = 3
⇒Y = 3

Therefore, the present age of A is 5 × Y = 5 × 3 = 15 years. Hence, the **second option** is correct.

Q. 19 **Directions:** The present age of P is 45 years. 9 years hence, the ages of P and Q will be in the ratio 6 : 7. What is the present age (in years) of Q?

Option 1:
64

Option 2:
54

Option 3:
63

Option 4:
53

Correct Answer:
54

Solution:
Given:
The present age of P is 45 years.
9 years later, the ratio of the ages of P and Q will be 6 : 7

After 9 years, P's age will be 45 + 9 = 54 years
Let, P and Q's ages after 9 years be 6Y and 7Y.
According to the question –
⇒ 6Y = 54
⇒ Y = 54 ÷ 6
⇒ Y = 9
Therefore, the present age of Q→7Y – 9 = (7 × 9) – 9 = 63 – 9 = 54

So, Q's present age is 54 years. Hence, the **second option** is correct.

Q. 20 **Directions:** The ratio of the present ages of A and B is 4 : 5. After 5 years, the age of B will be 35 years. What is the present age (in years) of A?

Option 1:
24

Option 2:
29

Option 3:
26

Option 4:
31

Correct Answer:
24

Solution:
Given:
The ratio of the present ages of A and B is 4 : 5

Let A's present age = 4Y and B's present age = 5Y
B's age after 5 years will be 35 years.
According to the question –
⇒ 5Y + 5 = 35
⇒ 5Y = 35 – 5
⇒ 5Y = 30
⇒ Y = 30 ÷ 5
⇒ Y = 6
Therefore, A's present age→4Y = 4 × 6 = 24 years

Hence, the **first option** is correct.

Q. 21 **Directions:** A man was 32 years of age when he had his first son. His wife was 35 years of age when his son attained the age of 7 years. What is the difference between the age of the father and the mother?

Option 1:
7 years

Option 2:
3 years

Option 3:
5 years

Option 4:
4 years

Correct Answer:
4 years

Solution:
The wife was 35 years old when her son was 7 years old.
⇒ The wife's age when her son was born = (35 – 7) = 28 years and her husband's age was 32 years old when the son was born.

So, the difference between their ages = (32 – 28) = 4 years Hence, the **fourth option** is correct.

Q. 22 **Directions:** 12-year-old Sami is three times as old as his brother Vinay. How old will Sami be when he is twice as old as Vinay?

Option 1:
18 years

Option 2:
14 years

Option 3:
20 years

Option 4:
16 years

Correct Answer:
16 years

Solution:
Given:
Sami's present age is 12 years.

Also, Sami's age = 3 × Vinay's age
⇒ Vinay's age = Sami's age ÷ 3
⇒ VInay's age = 12 ÷ 3
⇒ Vinay's age = 4 years

Let, after y years, Sami's age = (12 + y) years, Vinay's age = (4 + y) years
Also, after y years, Sami's age = 2 × Vinay's age
⇒ (12 + y) = 2 × (4 + y)

⇒ 12 + y = 8 + 2y
⇒ 12 – 8 = 2y – y
⇒ y = 4 years

So, after 4 years, Sami's age = 16 years and Vinay's age = 8 years.

So, Sami will be 16 years old when he is twice as old as Vinay. Hence, the **fourth option** is correct.

Q. 23 **Directions:** A man was 31 years of age when his son was born. His wife was 26 years of age when his son attained the age of 7 years. What is the difference between the man's age and his wife's age?

Option 1:
7 years

Option 2:
9 years

Option 3:
5 years

Option 4:
12 years

Correct Answer:
12 years

Solution:
Given:
A man was 31 years old when his son was born.

When their son was 7 years old, his wife's age = 26 years
Wife's age when the son was born = (26 – 7) = 19 years

Therefore, the difference between the man's age and his wife's age = (31 – 19) = 12 years

So, the difference between their ages is 12 years. Hence, the **fourth option** is correct.

Q. 24 **Directions:** A was twice as old as B, two years ago. If the difference in their ages is 2 years, find A's age.

Option 1:
6 years

Option 2:
8 years

Option 3:
10 years

Option 4:
4 years

Correct Answer:
6 years

Solution:

Let, the present age of A = A years, and the present age of B = B years

As per the given information, A = (B + 2)

Two years ago, A's age = (A – 2) years, and B's age = (B – 2) years.

⇒ (A – 2) = 2 × (B – 2)

⇒ A – 2 = 2B – 4

⇒ 4 – 2 = 2B – A

⇒ 2B – A = 2

Now, substitute the value of A = B + 2 in the above equation,

⇒ 2B – (B + 2) = 2

⇒ 2B – B – 2 = 2

⇒ B = 2 + 2 ⇒ B = 4 years

So, A's age is 6 years. Hence, the **first option** is correct.

Q. 25 **Directions:** Adam who is 20 years old is 4 times as old as Mary. What will be Mary's age when Adam is twice as old as her?

Option 1:
35 years

Option 2:
15 years

Option 3:
30 years

Option 4:
17 years

Correct Answer:
15 years

Solution:

Given:

Adam's age = 20 years

Also, Adam's age = 4 × Mary's age

⇒ Mary's age = Adam's age ÷ 4

⇒ Mary's age = 20 ÷ 4 = 5 years.

Let us assume that after A years, Adam's age is twice the Mary's age;
Adam's age after A years = (20 + A) years, and Mary's age after A years = (5 + A) years.
Also, after A years, Adam's age = 2 × Mary's age
⇒ (20 + A) = 2(5 + A)
⇒ 20 + A = 10 + 2A
⇒ 20 – 10 = 2A – A
⇒ A = 10 years
Therefore, Mary's age after 10 years will be 15 years, and Adam's age after 10 years will be 30 years.

So, Mary's age after 10 years will be 15 years. Hence, the **second option** is correct.

Q. 26 **Directions:** Jay and his father have an age difference of 35 years now. After 5 years, the sum of their age will be 125. What will be the age of Jay and his father after 12 years from now?

Option 1:
51 years, and 85 years

Option 2:
52 years, and 87 years

Option 3:
40 years, and 75 years

Option 4:
45 years, and 70 years

Correct Answer:
52 years, and 87 years

Solution:
Let the present age of Jay be A years, and his father's present age be B years.
Their age difference is 35 years.
⇒ B – A = 35
⇒ B = 35 + A
After 5 years, Jay's age = (A + 5) years, and his father's age = (B + 5) years.
⇒ (A + 5) + (B + 5) = 125
⇒ A + B + 10 = 125
⇒ A + B = 115

Now, substitute the value of B from the equation, B = 35 + A
⇒ A + 35 + A = 115
⇒ 2A + 35 = 115
⇒ 2A = 115 – 35
⇒ 2A = 80
⇒ A = 80 ÷ 2
⇒ A = 40 years
If A = 40, then B = 35 + A
⇒ B = 35 + 40 = 75 years

So, after 12 years, Jay's age = 40 + 12 = 52 years, and his father's age = 75 + 12 = 87 years. Hence, the **second option** is correct.

Q. 27 **Directions:** The sum of the ages of the mother, daughter, and son is 87 years. What will be the sum of their ages after 8 years?

Option 1:
101

Option 2:
110

Option 3:
111

Option 4:
105

Correct Answer:
111

Solution:
Given:
The sum of the ages of the mother, daughter, and son = 87 years

Let the mother's present age be A years, the daughter's present age be B years, and the son's present age be C years.
⇒ A + B + C = 87

After 8 years, mother's age = (A + 8) years, daughter's age = (B + 8) years, and son's age = (C + 8) years
Sum of their ages after 8 years = (A + 8) + (B + 8) + (C + 8)
= A + B + C + 24
= 87 + 24
= 111

So, the sum of their ages will be 111 years. Hence, the **third option** is correct.

Q. 28 **Directions**: 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 52 years now, then the son's age 8 years back was?

Option 1:
10 years

Option 2:
18 years

Option 3:
12 years

Option 4:
20 years

Correct Answer:
18 years

Solution:
Given:
The father's present age = 52 years.

Let the son's present age be X years.
The difference between the father and son's present age –
⇒ 52 – X = X
⇒ X = 26
So, the son's present age is 26 years.
The son's age, 8 years back = 26 – 8 = 18 years.

So, 8 years back son's age was 18 years. Hence, the **second option** is correct.

Q. 29 **Directions:** Hema was twice as old as Geeta 10 years ago. How old is Geeta today, if Hema will be 40 years old 10 years henceforth?

Option 1:
25 years

Option 2:
20 years

Option 3:
15 years

Option 4:
35 years

Correct Answer:
20 years

Solution:
Given:
The age of Hema after 10 years = 40 years

⇒ The present age of Hema = 40 – 10 = 30 years
10 years ago, the age of Hema
⇒ 30 – 10 = 20 years
And, 10 years ago, the age of Geeta
⇒ 20 – 10 = 10 years
Thus, the present age of Geeta
⇒ 10 + 10 = 20 years.

So, the present age of Geeta is 20 years. Hence, the **second option** is correct.

Q. 30 **Directions:** Mani is double the age of Prabhu, and Ramona is half the age of Prabhu. If Mani is sixty, find out the age of Ramona.

Option 1:
10

Option 2:
15

Option 3:
20

Option 4:
24

Correct Answer:
15

Solution:
Given:
The present age of Prabhu = X
And, the age of Mani = 2X
And, the age of Ramona = 1/2X
Age of Mani = 60
Therefore, 2X = 60
⇒ X = 60 ÷ 2 = 30

So, the age of Ramona = 30 ÷ 2 = 15 years. Hence, the **second option** is correct.

Q. 31 **Directions:** Govind is 48 years old. He is twice as old as his son Prem, is now. How old was Prem seven years ago?

Option 1:
16

Option 2:
17

Option 3:
13

Option 4:
18

Correct Answer:
17

Solution:
Given:
Age of Govind = 48 years old.

Let, the present age of Prem = X years
And, the present age of Govind = 2X years
According to the given question,
⇒ 2X = 48,
⇒ X = 48 ÷ 2 = 24 years

So, seven years before, Prem age was ⇒ 24 – 7 = 17 years. Hence, the **second option** is correct.

Q. 32 **Directions:** The total age of a mother and her daughter is 60 years. The difference between their ages is 30 years. Find out the age of the mother.

Option 1:
40 years

Option 2:
45 years

Option 3:
50 years

Option 4:
55 years

Correct Answer:
45 years

Solution:
Let the age of the mother be A and the age of the daughter be B.

The total age of a mother and her daughter is 60 years ⇒ A + B = 60
The difference between their ages is 30 years ⇒ A – B = 30

On adding both the equations, the equation becomes –
⇒ A + B + A – B = 60 + 30
⇒ 2A = 90
⇒ A = 90 ÷ 2
⇒ A = 45

So, the age of the mother is 45 years. Hence, the **second option** is correct.

Q. 33 **Directions:** A father is 5 times as old as his son. His son is 6 years old. After how many years, will the father be 4 times as old as his son?

Option 1:
5 years

Option 2:
6 years

Option 3:
4 years

Option 4:
2 years

Correct Answer:
2 years

Solution:
Given:
The present age of the son = 6 years
The father's present age is five times the age of his son,
⇒ Father's present age = 6 × 5 = 30 years

Let's assume that after Y years, his father's age will be four times his son's age.
After Y years, Father's age = (30 + Y) years, his son's age = (6 + Y) years

According to the given statement,
⇒ 4 × (6 + Y) = (30 + Y)
⇒ 24 + 4Y = 30 + Y
⇒ 4Y – Y = 30 – 24
⇒ 3Y = 6
⇒ Y = 2

So, after 2 years the age of the father will be 4 times as old as his son. Hence, the **fourth option** is correct.

Q. 34 **Directions:** A father tells his son, "I was three times your present age when you were born". If the father's present age is 48 years, how old was the boy 4 years ago?

Option 1:
24 years

Option 2:
8 years

Option 3:
12 years

Option 4:
16 years

Correct Answer:
8 years

Solution:
Let the present age of the son be A years.
Father's age at the time of the birth of his son = (3 × A) years

Father's present age = Father's age at the time of the birth of his son + Present age of the son
⇒ Father's present age = 3A + A = 4A years

But, the father's present age is 48 years.
⇒ 4A = 48
⇒ A = 12 years
The present age of the son is 12 years.
4 years ago, Son's age = 12 – 4 = 8 years

So, the age of the son 4 years ago was 8 years. Hence, the **second option** is correct.

Q. 35 **Directions:** The mother was three times the age of her daughter five years ago. After five years, the mother will be twice as old as her daughter. How old is the daughter today?

Option 1:
5 years

Option 2:
10 years

Option 3:
15 years

Option 4:
20 years

Correct Answer:
15 years

Solution:
Let the daughter's present age be A years.

Five years ago, the daughter's age = (A – 5) years
Her mother's age was three times the age of her daughter = 3 × (A – 5) = (3A – 15) years
So, Mother's present age = (3A – 15) + 5 = (3A – 10) years

After 5 years, Daughter's age = (A + 5) years, and her mother's age = (3A – 10) + 5 = (3A – 5) years
Also, as per the given statement, after five years, the mother will be twice as old as her daughter,
⇒ 3A – 5 = 2 × (A + 5)
⇒ 3A – 5 = 2A + 10
⇒ 3A – 2A = 10 + 5
⇒ A = 15 years

So, the present age of the daughter is 15 years. Hence, the **third option** is correct.

Q. 36 **Directions:** The present ages of the three friends are in the proportions 6 : 7 : 8. Five years ago, the sum of their ages was 48 years. Find out their present ages in years.

Option 1:
24, 28, 32

Option 2:
18, 21, 24

Option 3:
30, 35, 40

Option 4:
12, 14, 16

Correct Answer:
18, 21, 24

Solution:
Given:
Ratio of present ages of three friends = 6 : 7 : 8
The sum of their ages, five years ago = 48 years

Let the present age of the three friends be 6x, 7x, 8x.
So, five years ago their ages were→(6x – 5); (7x – 5); (8x – 5)
According to the question –
⇒ (6x – 5) + (7x – 5) + (8x – 5) = 48
⇒ 21x – 15 = 48
⇒ 21x = 48 + 15
⇒ x = 63/21
⇒ x = 3
Therefore, their present ages –
6x = 6 × 3 = 18
7x = 7 × 3 = 21
8x = 8 × 3 = 24

Hence, the **second option** is correct.

Q. 37 **Directions:** The present ages of father and son are in the ratio of 5:1, respectively. Seven years later this ratio becomes 3:1. What is the son's present age in years?

Option 1:
8

Option 2:
7

Option 3:
6

Option 4:
5

Correct Answer:
7

Solution:
Given:
The ratio of the present age of father and son = 5:1
The ratio of age of father and son, seven years later = 3:1

Let the present age the father and son be 5x, x.
So, seven years later their ages will be→(5x + 7), (x + 7)
According to the question,
⇒ (5x + 7)/(x + 7) = 3/1
⇒ 5x + 7 = 3(x + 7)
⇒ 5x + 7 = 3x + 21
⇒ 5x – 3x = 21 – 7
⇒ 2x = 14
⇒ x = 7

Therefore, the son's present age is x = 7 × 1 = 7 years. Hence, the **second option** is correct.

Q. 38 **Directions:** The sum of the ages of a father and a son presently is 70 years. After 10 years, the son's age is exactly half that of the father. What are their ages now?

Option 1:
45 years, 25 years

Option 2:
50 years, 20 years

Option 3:
47 years, 23 years

Option 4:
50 years, 25 years

Correct Answer:
50 years, 20 years

Solution:
Let the father's present age be A, and his son's present age be B.

As per the given information,
The sum of the father's present age and his son's present age is 70 years ⇒ A + B = 70

After 10 years, father's age = (A + 10), and his's son's age = (B + 10)
Also, after 10 years, Son's age will be half the of his father's age, i.e., (A + 10) = 2 × (B + 10)
⇒ A + 10 = 2B + 20
⇒ A = 2B + 20 – 10
⇒ A = 2B + 10

So, substitute the value of A in equation A + B = 70, thus, the equation becomes –
⇒ 2B + 10 + B = 70
⇒ 3B = 70 – 10 = 60
⇒ B = 60 ÷ 3 = 20

Therefore, the Son's present age is 20 years, and the Father's present age is 50 years. Hence, the **second option** is correct.

Q. 39 **Directions:** The age of Dr. Pandey is four times the age of his son. After 10 years, the age of Dr. Pandey will be twice the age of his son. What is the present age of Dr. Pandey's son?

Option 1:
4 years

Option 2:
5 years

Option 3:
6 years

Option 4:
8 years

Correct Answer:
5 years

Solution:
Let Dr. Pandey's present age be A, and Dr. Pandey's son's present age be B.

As per the given information,
Dr. Pandey's age is four times the age of his son ⇒ A = 4 × B = 4B

After 10 years, Dr. Pandey's age = (A + 10), and Dr. Pandey's son's age = (B + 10)
Also, after 10 years, Dr. Pandey's age will be twice his son's age, i.e., (A + 10) = 2 × (B + 10)

As, A = 4B; therefore, (A + 10) = 2 × (B + 10) can be written as –
⇒ (4B + 10) = 2 × (B + 10)
⇒ 4B + 10 = 2B + 20
⇒ 4B – 2B = 20 – 10
⇒ 2B = 10 ⇒ B = 10 ÷ 2
⇒ B = 5

So, Dr. Pandey's son's present age is 5 years. Hence, the **second option** is correct.

Q. 40 **Directions:** The sum of the present age of the father and his son is 60 years. Six years ago, the father's age was five times the age of the son. After 6 years, what will be the son's age?

Option 1:
45

Option 2:
25

Option 3:
20

Option 4:
33

Correct Answer:
20

Solution:
Let the father's present age be A, and his son's present age be B.

As per the given information,
The sum of the father's present age and his son's present age is 60 years ⇒ A + B = 60

6 years ago, the father's age = (A – 6), and his son's age = (B – 6)
Also, 6 years ago, the father's age was five times his son's age, i.e., (A – 6) = 5 × (B – 6)
⇒ A – 6 = 5B – 30
⇒ A = 5B – 30 + 6
⇒ A = 5B – 24

So, substitute the value of A in equation A + B = 60, thus, the equation becomes –
⇒ 5B – 24 + B = 60
⇒ 6B = 60 + 24 = 84
⇒ B = 84 ÷ 6 = 14

Therefore, the Son's present age is 14 years, and after 6 years is 20 years. Hence, the **third option** is correct.

Q. 41 **Directions:** A man is 3 years older than his wife and four times as old as his son. If the son becomes 15 years old after 3 years, then what is the present age of the wife?

Option 1:
60 years

Option 2:
51 years

Option 3:
48 years

Option 4:
45 years

Correct Answer:
45 years

Solution:
Let the man's present age be A, his wife's present age be B, and his son's age be C.

As per the given information,
The man is 3 years older than his wife ⇒ A = B + 3
The man's age is four times the age of his son's age ⇒ A = 4 × C = 4C

After 3 years, the man's son's age = 15 years
Thus, his present age = 15 – 3 = 12 years, i.e., C = 12
If C = 12, then A = 4 × 12 = 48 years
⇒ A = B + 3 ⇒ B = A – 3 = 48 – 3 = 45 years

So, the man's wife's present age is 45 years. Hence, the **fourth option** is correct.

Q. 42 **Directions:** The ratio of the ages of a man and his wife is 4 : 3. After 4 years, the ratio will be 9 : 7. If at the time of marriage, the ratio was 5 : 3, how many years ago were they married?

Option 1:
12

Option 2:
24

Option 3:
5

Option 4:
8

Correct Answer:
12

Solution:
The ratio of the present ages of a man and his wife = 4 : 3
So, the man's present age = 4a years, and his wife's present age = 3a years
After four years, man's age = (4a + 4) years, and his wife's age = (3a + 4) years
The ratio of the ages after 4 years = 9 : 7
Now, on comparing the ratio with the exact age value,
$\Rightarrow \frac{4a+4}{3a+4} = \frac{9}{7}$
$\Rightarrow$ 7(4a + 4) = 9(3a + 4)
$\Rightarrow$ 28a + 28 = 27a + 36
$\Rightarrow$ 28a – 27a = 36 – 28
$\Rightarrow$ a = 8
So, the man's present age = 32 years, and his wife's age = 24 years

Let they were married y years back.
So, y years ago, the man's age = (32 – y) years, his wife's age = (24 – y) years
From the question,
$\Rightarrow \frac{32-y}{24-y} = \frac{5}{3}$
$\Rightarrow$ 3(32 – y}) = 5(24 – y)
$\Rightarrow$ 96 – 3y = 120 – 5y
$\Rightarrow$ 5y – 3y = 120 – 96
$\Rightarrow$ 2y = 24
$\Rightarrow$ y = 12

So, they were married 12 years ago. Hence, the **first option** is correct.

Q. 43 **Directions:** Aman is 3 years older than Rohit and 3 years younger than Suresh, while Rohit and Danish are twins. How many years is Suresh older than Danish?

Option 1:
3

Option 2:
2

Option 3:
6

Option 4:
12

Correct Answer:
6

Solution:
Given:
Aman is 3 years older than Rohit and 3 years younger than Suresh, while Rohit and Danish are twins.

Let the age of Rohit be = x years.
Then, the age of Aman will be = x + 3 years.
The age of Suresh will be, x + 3 + 3 years = x + 6 years (Since Aman is 3 years younger than Suresh).
The age of Danish will be, x years (as Danish and Rohit are twins)
Thus, the difference between the ages of Danish and Suresh will be –
x + 6 – x = 6 years.

Therefore, Suresh is 6 years older than Danish. Hence, the **third option** is correct.

Q. 44 **Directions:** A man was 32 years of age when he had his first son. His wife was 35 years of age when his son attained the age of 7 years. The difference in age between the man and his wife is?

Option 1:
7 years

Option 2:
3 years

Option 3:
5 years

Option 4:
4 years

Correct Answer:
4 years

Solution:
Given:
The age of the wife was 35 years and the age of the son was 7 years.

According to the question –
The age of the wife when her son was born was (35 – 7) = 28 years
But, the age of the man was 32 years old when his son was born.
Therefore, the difference in age between the man and his wife is (32 – 28) = 4 years.

So, the difference in age between the man and his wife is 4 years. Hence, the **fourth option** is correct.

Q. 45 **Directions:** Hari is twice as old as Johnny, who is three years older than Rahul. If Hari's age is five times Rahul's age, how old is Johnny?

Option 1:
2 years

Option 2:
4 years

Option 3:
5 years

Option 4:
8 years

Correct Answer:
5 years

Solution:
Let the ages of Hari, Johnny, and Rahul be H, J, and R respectively.

Hari is twice as old as Johnny ⇒ H = 2 × J (1st equation)
Johnny is three years older than Rahul ⇒ R + 3 = J
⇒ R = J – 3 (2nd equation)
Hari's age is five times Rahul's age ⇒ H = 5 × R (3rd equation)
Putting the value of R from the second equation in the above equation, the equation becomes –
⇒ H = 5 × (J – 3)
But, H = 2 × J (1st equation)
So, 5 × (J – 3) = 2 × J
⇒ 5 × J – 15 = 2 × J
⇒ 3 × J = 15
⇒ J = 5

So, the age of Johnny is 5 years. Hence, the **third option** is correct.

Q. 46 **Directions:** A father's age is one more than 5 times his son's age. After 3 years, the father's age would be 2 less than four times the son's age. Find the present age of the father.

Option 1:
30 years

Option 2:
40 years

Option 3:
31 years

Option 4:
29 years

Correct Answer:
31 years

Solution:
Let the present age of the father and son be F and S years respectively.

The father's present age is 1 more than 5 times his son's age ⇒ F = (5 × S) + 1
Father's age after 3 years = (5 × S) + 4
Son's age after 3 years = S + 3
After 3 years, the father's age would be 2 less than four times the son's age.
⇒ (5 × S) + 4 = 4 × (S + 3) – 2
⇒ (5 × S) + 4 = (4 × S) + 12 – 2 = (4 × S) + 10
⇒ S = 6
⇒ F = (5 × S) + 1
= 5 × 6 + 1 = 30 + 1 = 31 years.

So, the present age of the father is 31 years. Hence, the **third option** is correct.

Q. 47 **Directions:** Your mother is 4 years younger than your father who is six times older than you. If your age is 6 years, what is your mother's age?

Option 1:
36 years

Option 2:
34 years

Option 3:
28 years

Option 4:
32 years

Correct Answer:
32 years

Solution:
Given:
My age is 6 years and my father is six times older than me.
⇒ Father's age = 6 × 6 = 36 years
My mother is 4 years younger than my father.
⇒ Mother's age = 36 – 4 = 32 years

So, the age of my mother is 32 years. Hence, the **fourth option** is correct.

Q. 48 **Directions:** Amit is younger than Arjun by 6 years. If the ratio of the ages of Amit and Arjun is 5: 7, then what is the age of Amit (in years)?

Option 1:
41

Option 2:
35

Option 3:
15

Option 4:
45

Correct Answer:
15

Solution:
Given:
Amit is younger than Arjun by 6 years. The ratio of the ages of Amit and Arjun is 5 : 7.

Let the ages of Amit and Arjun be 5x and 7x.
According to the question,
Amit is younger than Arjun by 6 years:
7x – 5x = 6
2x = 6
x = 6/2
x = 3
Age of Amit is 5x = 5 × 3 = 15

So, the age of Amit is 15. Hence, the **third option** is correct.

Q. 49 **Directions:** The ratio of the father's age to the son's age is 5 : 2. If the product of their ages is 160, then what is the age of the father?

Option 1:
22

Option 2:
24

Option 3:
20

Option 4:
18

Correct Answer:
20

Solution:
Given:
The ratio of the father's age to the son's age is 5 : 2.
The product of their age is 160.

Let the age of the father = 5X
And the age of the son = 2X
According to the question,
$5X \times 2X = 160$
$10X^2 = 160$
$X^2 = 160/10$
$X = 4$

Therefore, the age of the son is $5 \times 4 = 20$. Hence, the **third option** is correct.

Q. 50 **Directions:** The sum of the present ages of Vishal and Aditi is 105 years. If Aditi is 25 years younger than Vishal, then what will be the present age of Pritam, who is 7 years older than Adit?

Option 1:
40 years

Option 2:
72 years

Option 3:
32 years

Option 4:
47 years

Correct Answer:
47 years

Solution:
Given:
(I) The sum of the present ages of Vishal and Aditi is 105 years.
(II) If Aditi is 25 years younger than Vishal

According to the statements –
(I) V's age + A's age = 105
(II) A's age = V's age – 25
⇒V's age = A's age + 25 (Put the value of V's age in equation I)
⇒A's age + 25 + A's age = 105
2 × A's age + 25 = 105
2 × A's age = 80
A's age = 40
Pritam's age = 7 + A's age; Pritam's age = 7 + 40 = 47

So, the present age of Pritam is 47 years. Hence, the **fourth option** is correct.

Q. 51 **Directions:** The sum of Reena's and her father's age is 60 and the difference between their ages is 36. What is Reena's father's age?

Option 1:
58 years

Option 2:
60 years

Option 3:
48 years

Option 4:
52 years

Correct Answer:
48 years

Solution:
Given:
Let the age of Reena = R
and the age of Reena's father = F
(I) The sum of Reena's and her father's age = R + F = 60
(II) The difference between their ages = F – R = 36
Add both the equations (I) and (II) we have
R + F + F + (–R) = 60 + 36
2F = 96; F = 48
Put the value of F in equation (I)
R + 48 = 60; R = 12

So, the age of Reena's father is 48 years. Hence, the **third option** is correct.

Q. 52 **Directions:** The sum of Kartik and his parents' ages is 122 years. Kartik's age is half of his mother's age. His mother is 7 years younger than his father. What is Kartik's age (in years) at present?

Option 1:
23

Option 2:
15

Option 3:
26

Option 4:
20

Correct Answer:
23

Solution:
Given:
Let the age of Kartik = k
The age of his father = x
And the age of his mother = y
The sum of Kartik and his parents' ages is 122 years→k + x + y = 122
Kartik's age is half of his mother's age→k = y ÷ 2; y = 2k
Kartik's mother is 7 years younger than his father→ x = y – 7; 2k – 7
Now, substituting values of x and y in terms of k in equation (I), we have –
k + 2k – 7 + 2k = 122
5k – 7 = 122
5k = 115
k = 23

So, the age of Kartik is 23 years. Hence, the **first option** is correct.

Q. 53 **Directions:** After 6 years, the sum of the years of service of P, Q, and R will be 56 years. Before 3 years, the sum of years of service of Q and R was 17 years. What is the current length of service of P?

Option 1:
17 years

Option 2:
15 years

Option 3:
11 years

Option 4:
12 years

Correct Answer:
15 years

Solution:

Let, the length of years of service of P = P years
The length of years of service of Q = Q years
The length of years of service of R = R years
⇒After 6 years, the sum of the years of service of P, Q, and R = (P + 6) + (Q + 6) + (R + 6) = 56
P + Q + R + 18 = 56
P + Q + R = 38 ----- (I)
⇒Before 3 years, the sum of years of service of Q and R = (Q – 3) + (R – 3) = 17
R + Q – 6 = 17
R + Q = 23 ----- (II)
From the equation (I) and (II) above,
P + 23 = 38
P = 15 years

Therefore, the current length of service of P is 15 years. Hence, the **second option** is correct.

Q. 54 **Directions:** A mother said to her son, When you were born I was the same age as you are now. If 5 years ago, the age of the son was 16 years, find the present age of the mother.

Option 1:
42 years

Option 2:
32 years

Option 3:
38 years

Option 4:
37 years

Correct Answer:
42 years

Solution:

Given:

5 years ago son's age = 16 years

Son's present age = 16 + 5 = 21 years

Now according to the question –

Age of mother when the son was born (21 years ago) = Present age of the son

21 years ago mother's age = 21 years.

Present age of mother = 21 + 21 = 42 years

So, the present age of the mother is 42 years. Hence, the **first option** is correct.

Q. 55 **Directions:** If 10 boys walk 10 km in 10 days, then how many days it will take for 3 boys to walk 10 km?

Option 1:

33.33

Option 2:

36

Option 3:

66.66

Option 4:

10

Correct Answer:

33.33

Solution:

Given:

M1 = 10; W1 = 10; D1 =10

M2 = 3; W2 = 10; D2 = ?

Here, M→boys; W→work done; D→days

Therefore, (M1 × D1) ÷ W1 = (M2 × D2) ÷ W2

⇒ (10 × 10) ÷ 10 = (3 × D2) ÷ 10

⇒ 100 = 3 × D2

⇒ D2 = 100/3

⇒ D2 = 33.33 days

So, the number of days is 33.33. Hence, the **first option** is correct.

Q. 56 **Directions:** Sumit wants to get his clothes washed. The laundry service charges in his city are such that for the first kg. of clothes, he is charged Rs 150, and after that, he is charged Rs 50 for every kg that follows. If he gets 10 kg of clothes washed, how much money does he pay for the laundry service?

Option 1:
Rs 250

Option 2:
Rs 450

Option 3:
Rs 650

Option 4:
Rs 600

Correct Answer:
Rs 600

Solution:
Given:
The weight of clothes that Sumit wants to get washed = 10kg

The cost of washing the first kg of clothes = Rs. 150
The cost of the remaining 9 kg of clothes = 50 × 9 = 450
The total cost of washing is 450 + 150 = 600

So, the total cost of washing is Rs. 600. Hence, the **fourth option** is correct.

Q. 57 **Directions:** If 4 cats can kill 4 rats in 4 minutes, how many minutes will it take 8 cats to kill 8 rats?

Option 1:
8

Option 2:
4

Option 3:
2

Option 4:
16

Correct Answer:
4

Solution:
Given:
If 4 cats can kill 4 rats in 4 minutes.

Here, apply the formula of time and work to get the required answer –
$(M_1 \times T_1)/R_1 = (M_2 \times T_2)/R_2$
Here, M = Number of cats, T = Time, R = Number of rats

So, $(4 \times 4)/4 = (8 \times T_2)/8$
$\Rightarrow 16/4 = (8 \times T_2)/8$
$\Rightarrow (4 \times 8)/8 = T_2$
$\Rightarrow T_2 = 4$

So, 8 cats kill 8 rats in 4 minutes. Hence, the **second option** is correct.

Q. 58 **Directions:** It took 20 days for all the leaves of a tree to fall. If the number of leaves that fell each day was twice that of the previous day, on which day would the tree be half bare?

Option 1:
10th day

Option 2:
11th day

Option 3:
40th day

Option 4:
19th day

Correct Answer:
19th day

Solution:
Let the total number of leaves on the tree be A.

The number of leaves that fell each day = 2 × (the number of leaves that fell on the previous day)

On the 20th day, all leaves fell.
The number of leaves fell on 20th day = 2 × (the number of leaves fell on the 19th day)
⇒ A = 2 × (the number of leaves fell on the 19th day)
⇒ The number of leaves fell on the 19th day = $\frac{A}{2}$ = half of the total leaves.

So, on the 19th day, the tree will be half bare. Hence, the **fourth option** is correct.

Q. 59 **Directions:** A shepherd had 17 sheep. All but nine died. How many sheep are left?

Option 1:
9

Option 2:
8

Option 3:
7

Option 4:
10

Correct Answer:
9

Solution:
Given:
Total number of sheep a shepherd has = 17

All but nine died means except nine, all the sheep had died.
Therefore, the total number of sheep left = 9

Hence, **the first option** is correct.

Q. 60 **Directions:** If the cost of 16 kg of wheat is Rs. 384, what is the cost of 90 kg of wheat?

Option 1:
Rs. 2,016

Option 2:
Rs. 2,024

Option 3:
Rs. 2,610

Option 4:
Rs. 2,160

Correct Answer:
Rs. 2,160

Solution:
Given:
The cost of 16 kg of wheat = Rs. 384

According to the question,
The cost of 1 kg wheat = 384 ÷ 16
= 24 Rs.
Therefore, the cost of 90 kg of wheat = 90 × 24
= 2160 Rs.

So, the cost of 90 kg wheat is 2160 Rs. Hence, the **fourth option** is correct.

Q. 61 **Directions:** Sonu and his friend Rahul went shopping. Sonu had Rs. 500 with him while Rahul had Rs. 240. Sonu spent twice as much as Rahul on shopping. Now Sonu has three times as much money as is left with Rahul. How much money did Sonu spend?

Option 1:
Rs. 60

Option 2:
Rs. 440

Option 3:
Rs. 120

Option 4:
Rs. 220

Correct Answer:
Rs. 440

Solution:
Given:
Sonu had = Rs. 500
Rahul had = Rs. 240

Let the money spent by Rahul on shopping be x.
So, Sonu spent the money on shopping is 2x.
According to the question,
(500 – 2x) = 3(240 – x)

(500 – 2x) = (720 – 3x)
(3x – 2x) = (720 – 500)
x = 220

The money spent by Sonu on shopping is 2x, 2 × 220 = Rs. 440. Hence, the **second option** is correct.

Q. 62 **Directions:** The price of onions is shown below for every fortnight. Find the price in the Feb. 3rd week.

Period	Dec. 1st week	Dec. 3rd week	Jan. 1st week	Jan. 3rd week	Feb. 1st week	Feb. 3rd week
Price	20	60	40	120	100	?

Option 1:
140

Option 2:
300

Option 3:
180

Option 4:
320

Correct Answer:
300

Solution:
Given:
The prices are 20, 60, 40, 120, 100, ?

20 × 3 = 60; 60 – 20 = 40; 40 × 3 = 120; 120 – 20 = 100; 100 × 3 = 300

So, the price in the Feb. 3rd week will be 300. Hence, the **second option** is correct.

Q. 63 **Directions:** The population of a village in Madurai is increasing year after year. Find out the population (in lakhs) in 2013 from the following information.

Year	2008	2009	2010	2011	2012	2013
Population	4	7	13	22	34	?

Option 1:
49

Option 2:
46

Option 3:
45

Option 4:
43

Correct Answer:
49

Solution:
Given:
The populations are 4, 7, 13, 22, 34, ?

Here, add a multiple of 3 in each number to get the next term.
4 + 3 = 7; 7 + 6 = 13; 13 + 9 = 22; 22 + 12 = 34; 34 + 15 = 49

So, the population in 2013 will be 49. Hence, the **first option** is correct.

Q. 64 **Directions:** The overall rainfall in certain regions of India decreases year after year. Find out from the data the trend in decrease.

Year	Rainfall (in mm)
2009	26
2010	25
2011	23
2012	20
2013	16
2014	11
2015	?

Option 1:
6 mm

Option 2:
7 mm

Option 3:
5 mm

Option 4:
8 mm

Correct Answer:
5 mm

Solution:

Given:
The rainfalls are 26, 25, 23, 20, 16, 11, ?

Here, subtract the consecutive natural numbers from each term to get the next term.
26 – 1 = 25; 25 – 2 = 23; 23 – 3 = 20; 20 – 4 = 16; 16 – 5 = 11; 11 – 6 = 5

So, the rainfall in 2015 will be 5 mm. Hence, the **third option** is correct.

Q. 65 **Directions:** In a zoo, there are Rabbits and Pigeons. If heads are counted, there are 200 and if legs are counted, there are 580. How many pigeons are there?

Option 1:
90

Option 2:
100

Option 3:
110

Option 4:
120

Correct Answer:
110

Solution:
Given:
Total number of legs = 580
Total number of heads = 200

Let the number of pigeons is X and the number of rabbits is Y.
Total number of heads = 200
⇒ X + Y = 200→(1)
We know that a rabbit has 4 legs and a pigeon has 2 legs.
⇒ 2X + 4Y = 580 or X + 2Y = 290→(2)
By solving equations (1) and (2)

X = 290 – 2Y
(290 – 2Y) + Y = 200
⇒ Y = 90
Also X + Y = 200
⇒ 90 + X = 200
⇒ X = 110

So, the number of pigeons is 110. Hence, the **third option** is correct.

Q. 66 **Directions:** A shepherd had 17 sheep. All but eight died. How many was he left with?

Option 1:
17

Option 2:
0

Option 3:
8

Option 4:
9

Correct Answer:
8

Solution:
Given:
Total sheep = 17
In the statement, a phrase is used 'all but' that means 'all except'.

The number of sheep that died is 9.
Therefore, the remaining number of alive sheep = 17 – 9 = 8

So, 8 sheep are left with the shepherd. Hence, the **third option** is correct.

Q. 67 **Directions:** If the sum of three consecutive numbers is 15, what is the square of the middle number?

Option 1:
16

Option 2:
25

Option 3:
36

Option 4:
9

Correct Answer:
25

Solution:
Let the three consecutive numbers be a, (a + 1), and (a + 2).

As per the question, the sum of the three consecutive numbers is 15, then –
⇒ a + a + 1 + a + 2 = 15
⇒ 3a + 3 = 15
⇒ 3a = 15 – 3
⇒ 3a = 12
⇒ a = 12 ÷ 3 = 4
Thus, the value of the middle number = (a + 1) = 4 + 1 = 5, and $(5)^2 = 25$

So, 25 is the required answer. Hence, the **second option** is correct.

Q. 68 **Directions:** 14 notebooks of a class were corrected with ink pen while 22 notebooks were corrected with colour pencil. If 4 notebooks were corrected with both, what is the strength of the class?

Option 1:
30

Option 2:
32

Option 3:
28

Option 4:
25

Correct Answer:
32

Solution:
Given:
Notebooks corrected with ink pen = 14
Notebooks corrected with colour pencil = 22
Notebooks corrected with both = 4

So, the total number of students in class = 14 + 22 – 4 = 32

Hence, the **second option** is correct.

Q. 69 **Directions:** A prime number between 10 and 50 remains unchanged if its digits are reversed, then find the square of such a number.

Option 1:
121

Option 2:
484

Option 3:
1089

Option 4:
1936

Correct Answer:
121

Solution:
Prime numbers between 10 and 50 are as follows –
11, 13, 17, 19, 23, 29, 31, 37, 41, 43, and 47
From these prime numbers, only 11 is the number that remains unchanged if its digits are reversed.
$\Rightarrow (11)^2 = 121$

So, 121 is the required answer. Hence, the **first option** is correct.

Q. 70 **Directions:** In a group of 50 students, 25 play Hockey, 30 play Football, and 8 play no games. What is the number of students who play both Hockey and Football?

Option 1:
10

Option 2:
11

Option 3:
12

Option 4:
13

Correct Answer:
13

Solution:
Given:
Total number of students = 50
Number of students who play hockey = 25

Number of students who play football = 30
Number of students who play neither sport = 8

Let the number of students that participate in both football and hockey = a.
⇒ 50 = 25 + 30 – a + 8
⇒ 50 = 55 – a + 8
⇒ a = 55 + 8 – 50
⇒ a = 63 – 50 = 13

So, 13 students play both football and hockey. Hence, the **fourth option** is correct.

Q. 71 **Directions:** In 5 years, Rs. 5000 amounts to Rs.9000. In what time at the same rate will Rs.600 amount to Rs.900?

Option 1:
5 years

Option 2:
3 years

Option 3:
6 years

Option 4:
2 years

Correct Answer:
3 years

Solution:
Given:
In 5 years, Rs.5000 amounts to Rs.9000.

We have,
Principal = 5000
Time = 5 yrs
Amount = 9000
Rate = ?
We know that,

Amount (A) = P + {(P × R × T)/100}
⇒ 9000 = 5000 + {(5000 × R × 5)/100}
⇒ 9000 – 5000 = (25000 × R)/100
⇒ 4000 = 250 × R
⇒ R = 4000/250
⇒ R = 16%
Now, new principal = 600
New amount = 900
Rate = 16%
A = P + {(P × R × T)/100}
⇒ 900 = 600 + {(600 × 16 × T)/100}
⇒ 900 – 600 = (9600 × T)/100
⇒ 300 = 96 × T
⇒ T = 300/96
⇒ T = 3.125 ≈ 3 years

So, 600 will become 900 in 3 years. Hence, the **second option** is correct.

Q. 72 **Directions:** In a family, Mr. Prakash has his wife and his two married brothers of whom one has two children and another has no child. How many members are there in the family?

Option 1:
12 members

Option 2:
8 members

Option 3:
6 members

Option 4:
10 members

Correct Answer:
8 members

Solution:

Mr. Prakash and his wife constitute 2 members.
Mr. Prakash has two married brothers. These constitute 4 members (His 2 brothers and their wives).
Also, one of the two married brothers has two children. These constitute 2 members.

So, the total members in the family are 2 + 4 + 2 = 8

Hence, the **second option** is correct.

Q. 73 **Directions:** In a group of equal numbers of cows and herdsmen, the number of legs was 28 less than four times the number of heads. The number of herdsmen was?

Option 1:
7

Option 2:
28

Option 3:
21

Option 4:
14

Correct Answer:
14

Solution:
Here, Number of cows = Number of herdsmen = X
Let the total no. of legs = L and the total no. of heads = H

A cow has 4 legs and a herdsman has 2 legs.
So, the total number of legs, L = 4X + 2X = 6X
Total number of heads, H = X + X = 2X

Now, according to the given statement, L = 4H – 28
⇒ 6X = 4 (2X) – 28
⇒ 6X = 8X – 28
⇒ 2X = 28
⇒ X = 14

So, the total number of herdsmen is 14. Hence, the **fourth option** is correct.

Q. 74 **Directions:** A man climbing up a wall 24 m high. He climbed 16 m on one day but slipped back by 3.40 m in the evening. How far had the man reached on that day?

Option 1:
19.40 m

Option 2:
12.60 m

Option 3:
11.40 m

Option 4:
12.40 m

Correct Answer:
12.60 m

Solution:
Given:
Total height of wall = 24 m
Height climbed by man = 16 m
Height by which he slipped = 3.40 m

⇒ Total height climbed by man = (16 – 3.40) m = 12.60 m

So, he had reached 12.60 m far on that day. Hence, the **second option** is correct.

Q. 75 **Directions:** In a group of 15 people, 7 read German, 8 read Spanish, while 3 of them read none of these two. Find how many of them read both German and Spanish.

Option 1:
1

Option 2:
2

Option 3:
3

Option 4:
5

Correct Answer:
3

Solution:
Given:
Total number of people = 15
Number of persons who read Spanish = 8
Number of persons who read German = 7
Number of persons who read neither German nor Spanish = 3

⇒ Total number of people = Number of people who read German + Number of people who read Spanish – Number of people who read both + Number of people who read neither German nor Spanish
⇒ 15 = 7 + 8 – Number of people who read both + 3
⇒ Number of people who read both = 7 + 8 – 15 + 3
⇒ Number of people who read both = 18 – 15
⇒ Number of people who read both = 3

So, only 3 persons read both German and Spanish. Hence, the **third option** is correct.

Q. 76 **Directions:** Identify the number which when added to itself 14 times gives 195.

Option 1:
16

Option 2:
13

Option 3:
15

Option 4:
14

Correct Answer:
13

Solution:
Given:
The number which when added to itself 14 times gives 195.

Let the number be x
According to the question –
x + 14x = 195
15x = 195
x = 13

Therefore, the number is 13. Hence, the **second option** is correct.

Q. 77 **Directions:** Two numbers are named as Number A and Number B. The sum of Number A, its square, and its cube is 399. The sum of Number B, its square, and its cube is 819. What would be the square of the number obtained by adding numbers A and B?

Option 1:
256

Option 2:
289

Option 3:
225

Option 4:
324

Correct Answer:
256

Solution:
Given:
(I) The sum of Number A, its square, and its cube is 399
$A + A^2 + A^3 = 399$
$7 + 49 + 343 = 399$
Thus, A = 7
(II) The sum of Number B, its square, and its cube is 819
$B + B^2 + B^3 = 819$
$9 + 81 + 729 = 819$
Thus, B = 9
The square of the number obtained by adding Number A and Number B
$(A + B)^2 = ?$
$(7 + 9)^2 = (16)^2 = 256$

So, the number is 256. Hence, the **first option** is correct.

Q. 78 **Directions:** The sum of a number's square, its cube, and its next number's cube is 205. What is the number?

Option 1:
3

Option 2:
5

Option 3:
4

Option 4:
6

Correct Answer:
4

Solution:
Given:
$x^2 + x^3 + (x + 1)^3 = 205$

By using the above equation let's check the option –
First option: 3; $3^2 + 3^3 + (3 + 1)^3 = 9 + 27 + 64 = 100 \neq 205$
Second option: 5; $5^2 + 5^3 + (5 + 1)^3 = 25 + 125 + 216 = 366 \neq 205$
Third option: 4; $4^2 + 4^3 + (4 + 1)^3 = 16 + 64 + 125 = 205$
Fourth option: 6; $6^2 + 6^3 + (6 + 1)^3 = 36 + 216 + 343 = 595 \neq 205$

So, the sum of the 4's square, its cube, and its next number's cube is 205. Hence, the **third option** is correct;

Q. 79 **Directions:** When a number is added to its next number and another number that is four times its next number, the sum of these three numbers is 95. Find the number.

Option 1:
16

Option 2:
14

Option 3:
17

Option 4:
15

Correct Answer:
15

Solution:
Let, the number be x
According to the question –
$x + (x + 1) + 4(x + 1) = 95$
By solving the above equation –
$6x + 5 = 95$
$6x = 95 - 5$
$6x = 90$
$x = 90 \div 6 = 15$

So, the number is 15. Hence, the **fourth option** is correct.

Q. 80 **Directions:** The cost of four cycle tyres and three tubes is INR 720, whereas the cost of three cycle tyres and four tubes is INR 610. What is the cost of a tube?

Option 1:
INR 42

Option 2:
INR 50

Option 3:
INR 40

Option 4:
INR 45

Correct Answer:
INR 40

Solution:

Given:

The cost of four cycle tyres and three tubes is INR 720 and the cost of three cycle tyres and four tubes is INR 610.

Let the cost of 1 tyre = A and the cost of 1 tube = B.

⇒Equations as per the given information in the questions –

I. 4A + 3B = 720

II. 3A + 4B = 610

By solving the above equations –

Add equations 1 and 2, we get –

7A + 7B = 1330

A + B = 190

A = 190 – B

Now, putting the value of A in equation 1, we get –

4(190 – B) + 3B = 720

B = 760 – 720

B = 40

So, the cost of one tube is 40. Hence, the **third option** is correct.

Q. 81 **Directions:** In a college, the total number of students who opted for Biology or Chemistry is 150. Later, 12 students who opted for Biology changed their preference and opted for Chemistry. Now, the number of students in Biology is half the number of students in Chemistry. How many students are in Chemistry now?

Option 1:
88

Option 2:
94

Option 3:
104

Option 4:
100

Correct Answer:
100

Solution:
Given:
The total number of students = 150
Let the number of students who opted for biology = x
and the number of students who opted for chemistry = y
This means –
x + y = 150 — (i)
Now, 12 students who opted for Biology changed their preference and opted for Chemistry.
So, the new number of students who opted for biology = x – 12
and the new number of students who opted for chemistry = y + 12

The number of students in Biology is half the number of students in Chemistry –
(x – 12) = (y + 12) ÷ 2
2(x – 12) = y + 12
2x – 24 = y + 12
2x – y = 36 — (ii)
Adding the equations (i) and (ii) –
x + y + 2x – y = 150 + 36
3x = 186
x = 186 ÷ 3
x = 62
Now, put the value of x in the equation (i) –
62 + y = 150
y = 150 – 62 = 88

So, the students who opted for chemistry now are (88 + 12) = 100. Hence, the **fourth option** is correct.

Q. 82 **Directions:** Anvita's mobile company charges INR 2 for the first 5 minutes of a call, and 35 paise per minute after the first 5 minutes. If Anvita was charged INR 9 in total for a call with her friend, what was the duration (in minutes) of the call?

Option 1:
20

Option 2:
15

Option 3:
27

Option 4:
25

Correct Answer:
25

Solution:
Given:
Anvita charged INR 9 for a call.
If INR 2 is charged for the first 5 minutes, then after 5 minutes charges are = 9 – 2 = 7
Charges per minute call = 35 paise
Thus, minutes for the call after 5 minutes –
Remaining charges ÷ Charges per minute after 5 minutes = 7 ÷ 0.35 = 20

So, the total duration of a call is 20 + 5 = 25 minutes. Hence, the **fourth option** is correct.

Q. 83 **Directions:** Which two signs and two numbers should be interchanged in the following equation to make it correct:
24 ÷ 12 × 21 – 273 + 14 = 179

Option 1:
14 and 21, × and +

Option 2:
14 and 21, + and ÷

Option 3:
21 and 12, + and ÷

Option 4:
14 and 24, × and +

Correct Answer:
14 and 21, + and ÷

Solution:
Given:
24 ÷ 12 × 21 – 273 + 14 = 179

Replace the signs and numbers according to the given options, to balance the equation.
Let's check the options –
First option: 14 and 21, × and +
⇒24 ÷ 12 + 14 – 273 × 21 = 179
2 + 14 – 273 × 21 = 179
2 + 14 – 5733 = 179
– 5717 ≠ 179
Second option: 14 and 21,+ and ÷
⇒24 + 12 × 14 – 273 ÷ 21 = 179
24 + 12 × 14 – 13 = 179
24 + 168 – 13 = 179
179 = 179
Third option: 21 and 12,+ and ÷
⇒24 + 21 × 12 – 273 ÷ 14 = 179
24 + 21 × 12 – 19.5 = 179
24 + 252 – 19.5 = 179
256.5 ≠ 179
Fourth option: 14 and 24,× and +
⇒14 ÷ 12 + 21 – 273 × 24 = 179
1.16 + 21 – 273 × 24 = 179
1.16 + 21 – 6552 = 179
– 6529.84 ≠ 179

So, the second option satisfies the given equation. Hence, the **second option** is correct.

Q. 84 **Directions:** Among five objects named K, L, M, N, and O, the weight of M is 60 kg. L is twice as heavy as N. O weighs thrice as heavy as L. K weighs half the weight of O. If K weighs equal to M, what is the weight of N?

Option 1:
30 kg

Option 2:
20 kg

Option 3:
80 kg

Option 4:
40 kg

Correct Answer:
20 kg

Solution:
Given:
K = M = 60 kg, L = 2N, O = 3L, K = O ÷ 2

As per the given information the weight of K and M is the same and M is 60 kg, so the weight of K will also be 60 kg.
Now, by K = O ÷ 2; 60 = O ÷ 2; O = 120 kg, by O = 3L; L = 120 ÷ 3 = 40; and by L = 2N; N = 40 ÷ 2 = 20 kg

So, the weight of N is 20 kg. Hence, the **second option** is correct.

Q. 85 **Directions:** Which two signs and two numbers should be interchanged in the following equation to make it correct:
19 × 12 - 51 ÷ 34 + 17 = 197

Option 1:
17 and 51, × and –

Option 2:
51 and 17, × and ÷

Option 3:
34 and 51, × and +

Option 4:
34 and 51, + and ÷

Correct Answer:
34 and 51, + and ÷

Solution:
Given:
19 × 12 – 51 ÷ 34 + 17 = 197

Interchanging the numbers and signs according to the options, to balance the equation –
Let's check the options –
First option: 17 and 51, × and –
⇒19 – 12 × 17 ÷ 34 + 51 = 197
19 – 12 × 0.5 + 51 = 197
19 – 6 + 51 = 197
64 ≠ 197
Second option: 51 and 17, × and ÷
⇒19 ÷ 12 – 17 × 34 + 51 = 197
1.58 – 17 × 34 + 51 = 197
1.58 – 578 + 51 = 197
– 525.42 ≠ 197
Third option: 34 and 51, × and +
⇒19 + 12 – 34 ÷ 51 × 17 = 197
19 + 12 – 0.66 × 17 = 197
19 + 12 – 11.22 = 197
19.78 ≠ 197
Fourth option: 34 and 51,+ and ÷
⇒19 × 12 – 34 + 51 ÷ 17 = 197

19 × 12 – 34 + 3 = 197
228 – 34 + 3 = 197
197 = 197

So, the fourth option satisfies the given equation. Hence, the **fourth option** is correct.

Q. 86 **Directions:** Which two mathematical signs should be interchanged to make the given equation correct?
(63 × 21) + 8 + 99 × 11 ÷ 16 + (12 × 4) = 158

Option 1:
+ and –

Option 2:
× and +

Option 3:
× and –

Option 4:
÷ and ×

Correct Answer:
÷ and ×

Solution:
Given:
(63 × 21) + 8 + 99 × 11 ÷ 16 + (12 × 4) = 158

Interchange the symbols according to the given options to make the equation correct.
Let's check the options –
First option: + and –
⇒ (63 × 21) – 8 – 99 × 11 ÷ 16 – (12 × 4) = 158
(1323) – 8 – 99 × 11 ÷ 16 – (48) = 158
1323 – 8 – 99 × 0.68 – 48 = 158
1323 – 8 – 67.32 – 48 = 158
1199.68 ≠ 158

Second option: × and +
⇒ (63 + 21) × 8 × 99 + 11 ÷ 16 × (12 + 4) = 158
84 × 8 × 99 + 11 ÷ 16 × 16 = 158
84 × 8 × 99 + 0.6875 × 16 = 158
84 × 8 × 99 + 0.6875 × 16 = 158
66528 + 10.88 = 158
66538.88 ≠ 158
Third option: × and –
⇒(63 – 21) + 8 + 99 – 11 ÷ 16 + (12 – 4) = 158
42 + 8 + 99 – 11 ÷ 16 + 8 = 158
42 + 8 + 99 – 0.68 + 8 = 158
156.32 ≠ 158
Fourth option: ÷ and ×
⇒(63 ÷ 21) + 8 + 99 ÷ 11 × 16 + (12 ÷ 4) = 158
3 + 8 + 9 × 16 + 3 = 158
3 + 8 + 144 + 3 = 158
158 = 158

So, only the fourth option satisfies the given equation. Hence, the **fourth option** is correct.

Q. 87 **Directions:** Which two mathematical signs should be interchanged to make the given equation correct?
(75 + 15) × 27 × 1 – 9 ÷ 7 × (135 + 3) – 10 ÷ (189 + 63) = 434

Option 1:
+ and ÷

Option 2:
+ and –

Option 3:
× and +

Option 4:
÷ and –

Correct Answer:
+ and ÷

Solution:
Given:
(75 + 15) × 27 × 1 – 9 ÷ 7 × (135 + 3) – 10 ÷ (189 + 63) = 434

Apply the changes according to the given options, to balance the equation.
Let's check the options –
First option: + and ÷
⇒ (75 ÷ 15) × 27 × 1 – 9 + 7 × (135 ÷ 3) – 10 + (189 ÷ 63) = 434
(5) × 27 × 1 – 9 + 7 × (45) – 10 + (3) = 434
135 – 9 + 315 – 10 + 3 = 434
434 = 434
Second option: + and –
⇒ (75 – 15) × 27 × 1 + 9 ÷ 7 × (135 – 3) + 10 ÷ (189 – 63) = 434
(60) × 27 × 1 + 9 ÷ 7 × (132) + 10 ÷ (126) = 434
1620 + 1.28 × 132 + 0.079 = 434
1620 + 168.96 + 0.079 = 434
1789.03 ≠ 434
Third option: × and +
⇒ (75 × 15) + 27 + 1 – 9 ÷ 7 + (135 × 3) – 10 ÷ (189 × 63) = 434
(75 × 15) + 27 + 1 – 9 ÷ 7 + (135 × 3) – 10 ÷ (189 × 63) = 434
1125 + 27 + 1 – 9 ÷ 7 + 405 – 10 ÷ (11907) = 434
1125 + 27 + 1 – 1.2 + 405 – 0.00008 = 434
1556.79 ≠ 170
Fourth option: ÷ and –
⇒(75 + 15) × 27 × 1 ÷ 9 – 7 × (135 + 3) ÷ 10 – (189 + 63) = 434
(90) × 27 × 1 ÷ 9 – 7 × (138) ÷ 10 – (252) = 434
270 – 7 × 13.8 – 252 = 434
270 – 96.6 – 252 = 434
–78.6 ≠ 434

So, only the first option satisfies the given equation. Hence, the **first option** is correct.

Q. 88 **Directions:** Which two numbers (not digits) should be interchanged to make the given equation correct?
(18 × 2) – 24 + 10 × 160 ÷ 16 + (10 × 4) = 170

Option 1:
2 and 24

Option 2:
2 and 4

Option 3:
24 and 18

Option 4:
16 and 18

Correct Answer:
24 and 18

Solution:
Given:
(18 × 2) – 24 + 10 × 160 ÷ 16 + (10 × 4) = 170

Let's check the options –
First option: 2 and 24
⇒ (18 × 24) – 2 + 10 × 160 ÷ 16 + (10 × 4) = 170
432 – 2 + 10 × 10 + 40 = 170
432 – 2 + 100 + 40 = 170
430 + 140 = 170
570 ≠ 170
Second option: 2 and 4
⇒ (18 × 4) – 24 + 10 × 160 ÷ 16 + (10 × 2) = 170
72 – 24 + 10 × 10 + 20 = 170
72 – 24 + 100 + 20
48 + 120 = 170
168 ≠ 170
Third option: 24 and 18
⇒ (24 × 2) – 18 + 10 × 160 ÷ 16 + (10 × 4) = 170
48 – 18 + 10 × 10 + 40 = 170
48 – 18 + 100 + 40 = 170
170 = 170
Fourth option: 16 and 18
⇒(16 × 2) – 24 + 10 × 160 ÷ 18 + (10 × 4) = 170
32 – 24 + 1600 ÷ 18 + 40 = 170

32 – 24 + 88.88 + 40 = 170
8 + 88.8 + 40 = 170
136.88 ≠ 170

So, only the third option satisfies the given equation. Hence, the **third option** is correct.

Q. 89 **Directions:** There are two numbers. The difference between these two numbers is 2 and the difference between their squares is 8. What are those numbers?

Option 1:
12, 10

Option 2:
3, 1

Option 3:
7, 5

Option 4:
8, 6

Correct Answer:
3, 1

Solution:
Given:
Let the two numbers be a and b.

The difference between these two numbers is 2.
⇒ a – b = 2 ————— (1)
And the difference between their squares is 8.
⇒ $a^2 - b^2 = 8$
As we know that $a^2 - b^2 = (a - b)(a + b)$
Now, put the value of $(a^2 - b^2)$ and (a – b) in $a^2 - b^2 = (a - b)(a + b)$.
⇒ $a^2 - b^2 = 2(a + b)$
⇒ 8 = 2(a + b)
⇒ 4 = a + b ————— (2)

Now, add the equations (1) and (2) –
⇒ a – b + a + b = 2 + 4
⇒ 2a = 6
⇒ a = 3
Now, put the value of a in equation (1) –
⇒ a – b = 2
⇒ 3 – b = 2 ⇒ b = 1

So, the value of a is 3 and b is 1. Hence, the **second option** is correct.

Q. 90 **Directions:** On a farm, there are 48 ducks, 42 goats, and 10 cows with some attendants. If the total number of feet is 216 more than the number of heads, what is the number of attendants on the farm?

Option 1:
10

Option 2:
14

Option 3:
8

Option 4:
12

Correct Answer:
12

Solution:
Given:
Number of Ducks = 48, Goats = 42 goats, Cows = 10 cows
Let the number of attendants be a.
Total number of feet of 48 ducks = 48 × 2 = 96
Total number of feet of 42 goats = 42 × 4 = 168
Total number of feet of 10 cows = 10 × 4 = 40
Total number of feet of a attendants = 2 × a = 2a
Each one has one head.

Total Heads = 48 + 42 + 10 + a = 100 + a
Total feet = 96 + 168 + 40 + 2a = 304 + 2a
Now according to the given question,
Total number of feet = Total number of heads + 216
(304 + 2a) = (100 + a) + 216
304 + 2a = 100 + a + 216
304 + 2a = 316 + a
2a – a = 316 – 304
a = 12

So, the total number of attendants on the farm is 12. Hence, the **fourth option** is correct.

Q. 91 **Directions:** INR 5,110 is to be divided among Rajesh, Vivek, and Kripal in such a way that Rajesh gets double the amount that Vivek gets, and Kripal gets double the amount that Rajesh gets. How much money will Kripal get?

Option 1:
INR 2,920

Option 2:
INR 2,188

Option 3:
INR 1,550

Option 4:
INR 2,236

Correct Answer:
INR 2,920

Solution:
Given:
Let Vivek gets = Rs X,
Rajesh gets double the amount that Vivek gets = Rs 2X
Kripal gets double the amount that Rajesh gets = Rs 4X

According to the question,
X + 2X + 4X = 5110
7X = 5110
X = 5110 ÷ 7 = 730
Thus, Vivek gets = Rs 730
Rajesh gets = 2 × 730 = Rs 1460
Kripal gets Rs = 4 × 730 = Rs 2,920.

So, Kripal gets Rs 2,920. Hence, the **first option** is correct.

Q. 92 **Directions:** In a class of 45 students, all students participate in one or both of the two games, that is Chess and Badminton. 11 students participate in both games, whereas 17 students participate only in Chess. How many total students participate in Badminton?

Option 1:
24

Option 2:
28

Option 3:
30

Option 4:
26

Correct Answer:
28

Solution:
Given:
Total number of students = 45
Students participated in both the games = 11
Students participated only in Chess = 17
Students participated in Badminton = (Total number of students – No. of students participated in Chess) = (45 – 17) = 28

So, 28 students participated in Badminton. Hence, the **second option** is correct.

Q. 93 **Directions:** If the sum of a number, its square and, its cube is 584, then what is the number?

Option 1:
8

Option 2:
6

Option 3:
7

Option 4:
9

Correct Answer:
8

Solution:
Let the number be X
According to the question –
$X + X^2 + X^3 = 584$

Let's check each option –
First option: 8; $8 + (8)^2 + (8)^3 = 8 + 64 + 512 = 584$
$584 = 584$
Second option: 6; $6 + (6)^2 + (6)^3 = 6 + 36 + 216 = 258$
$258 \neq 584$
Third option: 7; $7 + (7)^2 + (7)^3 = 7 + 49 + 343 = 399$
$399 \neq 584$
Fourth option: 9; $9 + (9)^2 + (9)^3 = 9 + 81 + 729 = 819$
$819 \neq 584$

So, the number is equal to 8. Hence, the **first option** is correct.

Q. 94 **Directions:** When a number X is added to the double of its cube, the number 1467 is obtained. Find the value of X.

Option 1:
6

Option 2:
9

Option 3:
7

Option 4:
8

Correct Answer:
9

Solution:
Let the number be X
$X + 2(X)^3 = 1467$

Let's check each option –
First option: 6; $6 + 2 \times (6)^3 = 6 + 2 \times 216$
$6 + 432 = 438$
$438 \neq 1467$
Second option: 9; $9 + 2 \times (9)^3 = 9 + 2 \times 729$
$9 + 1458 = 1467$
$1467 = 1467$
Third option: 7; $7 + 2 \times (7)^3 = 7 + 2 \times 343$
$7 + 686 = 693$
$693 \neq 1467$
Fourth option: 8; $8 + 2 \times (8)^3 = 8 + 2 \times 512$
$8 + 1024 = 1032$
$1032 \neq 1467$

So, the required number is 9. Hence, the **second option** is correct.

Q. 95 **Directions:** A and B are standing at the same point. They start moving in opposite directions at speeds of 5 kmph and 4 kmph respectively. What will be the distance between them after 3 hours?

Option 1:
3 km

Option 2:
21 km

Option 3:
18 km

Option 4:
27 km

Correct Answer:
27 km

Solution:
Given:
Speed of A = 5 kmph; Speed of B = 4 kmph
Time = 3 hours

According to the instructions given, both A and B are standing at the same point, and from there they start moving in opposite directions at different speeds.
Distance = Speed × Time
So, the distance travelled by A in 3 hours = 5 × 3 = 15 km
Distance travelled by B in 3 hours = 4 × 3 = 12 km
Therefore, the distance between A and B after 3 hours = 15 + 12 = 27 km

So, 27 km will be the distance between A and B after three hours. Hence, the **fourth option** is correct.

Q. 96 **Directions**: Ram leaves his house at 20 minutes to seven in the morning, and reaches Kunal's house in 25 minutes. They finish their breakfast in another 15 minutes and leave for their office which takes another 35 minutes. At what time do they leave Kunal's house to reach their office?

Option 1:
7:40 a.m.

Option 2:
7:20 a.m.

Option 3:
7:45 a.m.

Option 4:
8:15 a.m.

Correct Answer:
7:20 a.m.

Solution:
Here, calculate the time step by step by following the steps –

1. Ram leaves his house at 20 minutes to seven in the morning, which means at 6:40 a.m.
2. Ram reaches Kunal's house in 25 minutes means at 6:40 a.m. + 25 minutes = 7:05 a.m.
3. They finish their breakfast in another 15 minutes means at 7:05 a.m. + 15 minutes = 7:20 a.m.
4. After that takes another 35 minutes, which means at 7:20 a.m. + 35 minutes = 7:55 a.m.

So, they leave Kunal's house to reach their office at 7:20 a.m. Hence, the **second option** is correct.

Q. 97 **Directions:** If a train 150 m long crosses a pole in 12 seconds, then what is the speed of the train in km/h?

Option 1:
45

Option 2:
60

Option 3:
50

Option 4:
75

Correct Answer:
45

Solution:
Given:
Length of a train = 150m
Time taken to cross the pole = 12sec

So, Speed = Distance ÷ Time
= 150 ÷ 12
= $\frac{25}{2}$ m/sec
Convert it to km/h→ $\frac{25}{2} \times \frac{18}{5}$ = 45 km/h

So, 45 km/h is the required answer. Hence, the **first option** is correct.

Q. 98 **Directions:** Joel and Tom were travelling from town X to town Y which was 210 km apart. Joel set off 1 hour and 15 minutes later than Tom but arrived 15 minutes earlier. If the average speed of Tom was 42 km/h, find the average speed of Joel.

Option 1:
50 km/h

Option 2:
60 km/h

Option 3:
65 km/h

Option 4:
70 km/h

Correct Answer:
60 km/h

Solution:
Given:
Distance between town X and town Y = 210 km
Average speed of Tom = 42 km/h

Time taken by Tom = Distance ÷ Speed
= 210 ÷ 42
= 5 hours
Here, Joel started 1hr 15 mins late and arrived 15 mins earlier.
Thus, the time taken by Joel
= 5 hrs – 1hr 15mins – 15mins
= (5 × 60) – (1 × 60 + 15) – 15
= 300 – 75 – 15
= 300 – 90
= 210 mins
Now, convert minutes into hours –
= 210 ÷ 60
= 3.50 hrs
Average speed = Distance ÷ Time
= 210 ÷ 3.5
= 60 km/h

So, the average speed of Joel is 60 km/h. Hence, the **second option** is correct.

Q. 99 **Directions:** A bus driver wants to travel a distance of 200 km. He travels at a speed of 40 km/h. He takes rest at 3 different hotels for 15 minutes, 30 minutes and 15 minutes respectively. He starts his journey at 9:00 a.m. At what time does he reach his final destination?

Option 1:
3:00 a.m.

Option 2:
3:00 p.m.

Option 3:
3:30 a.m.

Option 4:
2:30 p.m.

Correct Answer:
3:00 p.m.

Solution:
Given:
Distance = 200 km
Speed = 40 km/h
Time = Distance ÷ Speed
= 200 ÷ 40
= 5 hours
Total time of rest
= (15 + 30 + 15) mins
= 60 mins
Now, convert minutes into hours
= 60 ÷ 60
= 1 hour
Total time taken by bus driver –
= 5 + 1
= 6 hours

Therefore, the bus driver will reach his destination at
= 9:00 a.m. + 6 hours
= 3:00 p.m.

Hence, the **second option** is correct.

Q. 100 **Directions:** Town A and Town B were 600 km apart. Joshua left town A for town B and travelled at an average speed of 65 km/h. At the same time, Menon left town B for town A. The two of them met 5 hours later. Find Menon's average speed.

Option 1:
55 km/h

Option 2:
60 km/h

Option 3:
65 km/h

Option 4:
120 km/h

Correct Answer:
55 km/h

Solution:
Given:
Distance between town A and town B = 600 km
Average speed of Joshua = 65 km/h
Time taken = 5 hours

So, Joshua covered a distance of = Speed × Time
= 65 × 5
= 325 km
Distance to be covered by Menon –
= 600 – 325
= 275 km

Therefore, the average speed of Menon –
= Distance ÷ Time
= 275 ÷ 5
= 55 km/h

Hence, the **first option** is correct.

Q. 101 **Directions:** The distance between the two cities is 30 km. A man goes at a speed of 30 km per hour and returns at 20 km per hour. What is his average speed?

Option 1:
25 km/hr

Option 2:
24 km/hr

Option 3:
10 km/hr

Option 4:
26 km/hr

Correct Answer:
24 km/hr

Solution:
Given:
Distance to be travelled = 30km
Speed A = 30km/hr, Speed B = 20km/hr

When the distance is constant, then the average speed = $\frac{2\times SpeedA\times SpeedB}{SpeedA+SpeedB}$
= $\frac{2\times 30\times 20}{30+20}$
= $\frac{1200}{50}$
= 24 km/hr

So, the average speed of the man is 24km/hr. Hence, the **second option** is correct.

Q. 102 **Directions:** Two horses A and B run at a speed of 3:2 ratio in the first lap, during the second lap the ratio differs by 4:7, and during the third lap their ratio differs by 8:9. What is the difference in the ratio of speed altogether between the two horses?

Option 1:
4

Option 2:
2

Option 3:
3

Option 4:
1

Correct Answer:
1

Solution:
Given:
Two horses A and B run at a speed of 3:2 ratio in the first lap, during the second lap their ratio differs by 4:7, and during the third lap, their ratio differs by 8:9.

Let us consider that the common factor for multiplication for the ratio speeds is x.
So, speeds achieved by A and B during the first, second and third laps are 3x, 4x, 8x and 2x, 7x, 9x
Avg speed achieved by A = (3x + 4x + 8x) ÷ 3= 15x ÷ 3 = 5x
Avg speed achieved by B = (2x + 7x + 9x) ÷ 3 = 18x ÷ 3 = 6x
Ratio of avg speeds of A and B = 5x : 6x = 5 : 6
The difference between the ratio of speeds altogether = 6 – 5 = 1

Therefore, the required difference is 1. Hence, the **fourth option** is correct.

Q. 103 **Directions:** 2 litre of pure alcohol is added to 6 litre, 40% alcohol solution. Then, what is the percentage of water in the solution?

Option 1:
65%

Option 2:
45%

Option 3:
55%

Option 4:
60%

Correct Answer:
45%

Solution:
Amount of water in 6 litre of 40% alcohol = $\frac{60 \times 6}{100}$
= 3.6 litres

According to the statement,
8 litres of solution also contains 3.6 litres of water.
Therefore, % of water in solution = $\frac{3.6}{8} \times 100$
= 45%

So, 45% of water is present in the solution. Hence, the **second option** is correct.

Q. 104 **Directions:** Ravi had five subjects in his final examination. The maximum marks in each subject are 100. If his percentage in four subjects is 80, and he scores 65 marks in the fifth subject, determine his overall percentage for the five subjects.

Option 1:
0.78

Option 2:
0.79

Option 3:
0.77

Option 4:
0.76

Correct Answer:
0.77

Solution:
Given:
Total number of Subjects→5
Maximum marks in each subject→100
% scored by Ravi in 4 subjects = 80%
Marks scored by Ravi in the 5th subject = 65

From the given information –
Maximum marks in all 5 subjects = 100 × 5 = 500
% scored by Ravi in 4 subjects = 80%
Total marks scored by Ravi in 4 subjects = 80/100 × (100 × 4)
= 80/100 x 400
= 320
Therefore, the total marks scored by Ravi in all 5 subjects = 320 + 65 = 385
⇒ Total % scored by Ravi = (385/500 × 100) % = 77% = 0.77

Hence, the **third option** is correct.

Q. 105 **Directions:** The price of an article has been reduced by 25%. To restore the original price, the new price must be increased by?

Option 1:
$11\frac{1}{9}\%$

Option 2:
$66\frac{2}{3}\%$

Option 3:
$9\frac{1}{11}\%$

Option 4:
$33\frac{1}{3}\%$

Correct Answer:
$33\frac{1}{3}\%$

Solution:
Let the price of an article be Rs 100.
The price of an article after reduction = 100 – 25 % of 100
The price of an article after reduction = 100 – ($\frac{25}{100}$ × 100) = 100 – 25 = Rs 75

Now, let the percentage increase in the price be x %.
So, according to the question –
⇒ 75 + x % of 75 = 100
⇒ x % of 75 = 100 – 75 = 25
⇒ $\frac{x}{100}$ × 75 = 25
⇒ x = $\frac{25\times100}{75}$
⇒ x = $33\frac{1}{3}\%$

So, the price must be increased by $33\frac{1}{3}\%$. Hence, the **fourth option** is correct.

Q. 106 **Directions:** The sum of the scores obtained by Ram and his two friends in an exam is 60% of the sum of the maximum marks for the exam for all three of them. If the ratio of their obtained marks is 4 : 5 : 6, how many of them scored more than 70% marks in the exam?

Option 1:
Three

Option 2:
None

Option 3:
One

Option 4:
Two

Correct Answer:
One

Solution:
Let the maximum mark be 100.
So, for all three maximum marks will be = 100 × 3 = 300.
The sum of the scores obtained by Ram and his two friends in an exam is 60% of the sum of the maximum marks = 60% of 300 = 60 ÷100 × 300 = 180
Now, the ratio of their obtained marks is 4: 5: 6
4x + 5x + 6x = 180
15x = 180
x = 180 ÷ 15
x = 12
The marks obtained by the persons = 4x, 5x and 6x;
48, 60, and 72.

So, only one person scored more than 70% marks. Hence, the **third option** is correct.

Q. 107 **Directions:** When the petrol prices increased by 25%, Yogesh reduced his travel so as to keep his monthly expenses on petrol the same as earlier. By what percentage did Yogesh reduce his travel?

Option 1:
30%

Option 2:
25%

Option 3:
15%

Option 4:
20%

Correct Answer:
20%

Solution:

Given:

Let us assume the cost of the petrol before increasing is Rs 100.

The petrol price has increased by 25 %.

The increased price will be –

⇒100 + (25 ÷ 100) × 100

⇒100 + 0.25 × 100

⇒100 + 25

⇒125 Rs

The increased expenditure = 125 – 100 = 25 Rs

So, consumption of petrol should decrease by percentage = (25 ÷ 125) × 100

⇒0.20 × 100 = 20%

So, Yogesh should decrease his travel expenses by 20%. Hence, the **fourth option** is correct.

Q. 108 **Directions:** In a fancy dress party of 200 people, 30% of the guests have dressed as animals. 40% of the remaining guests dressed as birds. 50% of the remaining guests have dressed as clowns. The remaining guests have dressed as plants. How many guests are dressed as plants?

Option 1:

62

Option 2:

42

Option 3:

56

Option 4:

70

Correct Answer:

42

Solution:

Given:

In a fancy party, the number of people = 200.

30% of the guests have dressed as animals = 30% of 200 = 30 ÷ 100 × 200= 60

So, people remaining = 200 – 60 = 140

40% of the remaining guests dressed as birds = 40% of 140 =40 ÷ 100 × 140 = 56

So, people now remaining = 140 – 56 =84

50% of the remaining guests have dressed as clowns = 50% of 84 = 50 ÷ 100 × 84 = 42

And the remaining people who dressed as plants = 84 – 42 = 42

So, 42 people dressed as plants. Hence, the **second option** is correct.

Q. 109 **Directions:** In a class, 80% of the students passed an examination. Out of these successful candidates, 27% of the students passed in the first division and 43% passed in the second division. A total of 90 students failed in the examination. How many students from the class passed in the third division?

Option 1:
120

Option 2:
108

Option 3:
125

Option 4:
110

Correct Answer:
108

Solution:

Given:

80% of the students passed an examination.

20% of students failed in an examination = 90

If 20% = 90

1% = 90 ÷ 20
1% = 45
100% = 450
80% = 360
27% of the students passed in the first division = 27% of 360
= 97.2
43% passed in the second division = 43% of 360
= 154.8
The number of students who passed in the third division = 360 – (97.2 + 154.8)
= 360 – 252
= 108

So, the number of students passing the third division is 108. Hence, the **second option** is correct.

Q. 110 **Directions:** If the price of a certain product is first decreased by 35% and then increased by 20%, then what is the net change in the price of the product?

Option 1:
20%

Option 2:
25%

Option 3:
22%

Option 4:
30%

Correct Answer:
22%

Solution:
Given:
Let the price of the product be 100.

When the price is decreased by 35%, it becomes 100 – 35% of 100 = 100 – 35 = 65
Then, it is increased by 20%. It becomes 65 + 20% of 65 = 65 + 13 = 78
Net change in the price of the product = {(Original price – Changed price) ÷ Original price} × 100
= {(100 – 78) ÷ 100} × 100
= {22 ÷ 100} × 100 = 22

So, the net change in the price is 22%. Hence, the **third option** is correct.

Q. 111 **Directions:** The value of a certain product depreciates at the rate of 20% every year. It was purchased 3 years ago. If its present value is INR 10,000, then what was the approximate purchase price of the product?

Option 1:
INR 15,237

Option 2:
INR 19,531

Option 3:
INR 18,145

Option 4:
INR 25,000

Correct Answer:
INR 19,531

Solution:
Given:
Let the purchasing value of the product 3 years ago = P
Depreciation rate = 20% every year
Time = 3 years
Equivalent depreciation rate for 3 years –
Equivalent rate for 2 years = (20 + 20) - {(20 × 20) ÷ 100} = 40 – (400 ÷ 100) = 40 – 4 = 36%
Equivalent rate of 36% and 20% = (36 + 20) – {(36 × 20) ÷ 100} = 56 – (720 ÷ 100) = 56 – 7.2 = 48.8%. Thus, the product value has been depreciated by 48.8% in 3 years

Remaining value = 100 – 48.8 = 51.2%
Present value = Rs. 10,000
51.2% of P = (51.2 ÷ 100) × P
Similarly,
51.2% of 10,000 = 10,000 ÷ 0.512 P
= 19531.25 ~ 19531

Thus, the product's value 3 years ago was Rs. 19531. Hence, the **second option** is correct.

Q. 112 **Directions:** A student has to obtain 40% of the maximum marks to pass. If she scored 80 marks and yet failed by 20 marks, then what were the maximum marks?

Option 1:
220

Option 2:
250

Option 3:
300

Option 4:
200

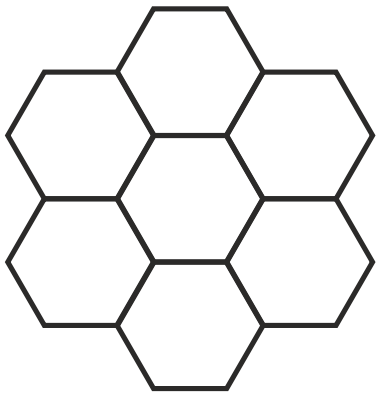
Correct Answer:
250

Solution:
Given:
Let maximum marks = x
Passing marks = 40% = 0.4 x → (i)
Marks scored = 80
Remaining marks to pass = 20
Passing marks = 80 + 20 = 100 → (ii)
Equation (i) and (ii),
0.4 x = 100

x = 100 ÷ 0.4
x = 1000 ÷ 4
x = 250

So, the maximum mark is 250. Hence, the **second option** is correct.

Q. 113 **Directions:** Six regular hexagons of side 5 cm are joined together to form the figure given below. What is the perimeter of the figure?



Option 1:
210

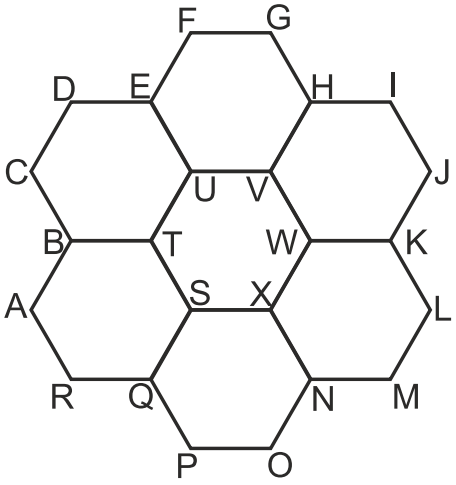
Option 2:
180

Option 3:
120

Option 4:
240

Correct Answer:
120

Solution:
Given:
The side of a regular hexagon is 5cm.



The perimeter of a given figure(P) = (Total length of the external boundary) + (Total length of the internal boundary)

P = (AB + BC + CD + DE + EF + FG + GH + HI + IJ + JK + KL + LM + MN + NO + OP + PQ + QR + RA) + (ST + TU + UV + VW + WX + XS)

P = (5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5) + (5 + 5 + 5 + 5 + 5 + 5)

P = 90 + 30

P = 120

Therefore, 120 is the perimeter of the given figure. Hence, the **third option** is correct.

Q. 114 **Directions:** Two persons A and B get the same salary. Their basic pay is different. The allowances are 65% and 80% of the basic pay respectively. What is the ratio of the basic pay?

Option 1:
17 : 15

Option 2:
7 : 5

Option 3:
11 : 10

Option 4:
12 : 11

Correct Answer:
12 : 11

Solution:
Given:
Two persons A and B get the same salary.
Their basic pay is different.
The allowances are 65% and 80% of the basic pay respectively.

Let's consider that A's basic pay is X and B's is Y.
As per the given details,
Allowances of A = 65% of basic pay
Salary of A = X + 65% of X
⇒ X + (65 ÷ 100) × X
⇒ X + (65X) ÷ 100
⇒ (100X + 65X) ÷ 100
⇒ 165X ÷ 100
Allowances of B = 80% of basic pay
Salary of B = Y + 80% of Y
⇒ Y + (80 ÷ 100) × Y
⇒ Y + (80Y) ÷ 100
⇒ (100 + 80Y) ÷ 100
⇒ 180Y ÷ 100
Again, it is given that both salaries are equal.
Therefore,
165X ÷ 100 = 180Y ÷ 100
⇒ 165X = 180Y (cancelling 100 on both sides denominators)
⇒ X ÷ Y = 180 ÷ 165
⇒ X : Y = 180 : 165
⇒ X : Y = 12 : 11

So, the ratio of the basic pay is 12 : 11. Hence, the **fourth option** is correct.

Q. 115 **Directions:** One day, 90 students were traveling in a bus and the ratio of the number of boys to girls was 2: 1. The next day, the number of students remained the same, but the ratio of the number of boys to girls became 3: 2. What was the difference between the numbers of boys traveling in the bus on both the days?

Option 1:
18

Option 2:
6

Option 3:
14

Option 4:
30

Correct Answer:
6

Solution:
Given:
90 students were traveling in a bus and the ratio of the number of boys to that of girls was 2: 1
According to the question,
2x + x = 90
3x = 90
x = 90 ÷ 3
x = 30
Therefore, Number of Boys = 60, Number of Girls = 30;
The next day, the number of students remained the same, but the ratio of the number of boys to that of girls became 3: 2
3x + 2x = 90
5x = 90
x = 90 ÷ 5
x = 18
Therefore, the Number of Boys = 54, The Number of Girls = 36
So the difference between the numbers of boys traveling in the bus = 60 – 54 = 6

Therefore, the difference between the numbers of boys traveling on the bus on both days is 6. Hence, the **second option** is correct.

Q. 116 **Directions:** A total of 60 students are traveling in a bus. The ratio of the number of boys to that of girls is 2 : 1. Then, 15 boys get down 5 girls get on the bus at the first stop, 5 boys get in and 10 girls get down from the bus at the second stop. What is the ratio of the number of boys to that of girls in the bus after the second stop?

Option 1:
3 : 2

Option 2:
2 : 1

Option 3:
2 : 3

Option 4:
3 : 1

Correct Answer:
2 : 1

Solution:
Given:
A total of 60 students are traveling in a bus. The ratio of the number of boys to that of girls is 2 : 1
2x + x = 60; 3x = 60; x = 60 ÷ 3; x = 20
Thus, Number of Boys = 2x = 40; Number of Girls = x = 20
Then, 15 boys get down and 5 girls get on the bus at the first stop
The remaining boys after the first stop; 40 – 15 = 25
The remaining girls after the first stop; 20 + 5 = 25
At the second stop, 5 boys get in and 10 girls get down from the bus.
The remaining boys after the second stop; 25 + 5 = 30
The remaining girls after the second stop; 25 – 10 = 15

So, the ratio of Boys: Girls = 30 : 15; 2 : 1. Hence, the **second option** is correct.

Q. 117 **Directions:** INR 2,871 is to be divided among A, B, and C in the ratio of 9 : 11 : 13, respectively. How much more money (in INR) will C get as compared to A?

Option 1:
INR 783

Option 2:
INR 348

Option 3:
INR 402

Option 4:
INR 296

Correct Answer:
INR 348

Solution:
Given:
INR 2,871 is to be divided among A, B, and C in the ratio of 9 : 11 : 13.
$9x + 11x + 13x = 2871$
$33x = 2871$
$x = 87$
Thus, $A = 9 \times 87 = 783$
$B = 11 \times 87 = 957$
$C = 13 \times 87 = 1131$
Therefore, $A - C = 1131 - 783 = 348$

So, C gets INR 348 more than A. Hence, the **second option** is correct.

Q. 118 **Directions:** An amount of INR 6,764 is to be distributed among four friends P, Q, R, and S in the ratio of 8: 6: 3: 2. How much amount will P and R get in total?

Option 1:
INR 4,120

Option 2:
INR 2,848

Option 3:
INR 3,916

Option 4:
INR 3,766

Correct Answer:
INR 3,916

Solution:
Given:
The ratio of P, Q, R, and S = 8: 6: 3: 2
The amount to be distributed = Rs 6,764
(8x + 6x + 3x + 2x) = Rs 6,764
19x = Rs 6,764
x = 6,764 ÷ 19
x = Rs 356
Thus, the amount each person received –
P = 8 × 356; = Rs 2,848
Q = 6 × 356; = Rs 2,136
R = 3 × 356; = Rs 1,068
S = 2 × 356; = Rs 712

So, the total amount of P and R (2,848 + 1,068) = INR 3,916. Hence, the **third option** is correct.

Q. 119 **Directions:** A certain sum of money was distributed among Darshana, Swati, and Nivriti. Nivriti has INR 539 with her. If the ratio of the money distributed among Darshana, Swati, and Nivriti is 5 : 6 : 7, what is the total sum of money that was distributed?

Option 1:
INR 1,341

Option 2:
INR 1,422

Option 3:
INR 1,386

Option 4:
INR 1,356

Correct Answer:
INR 1,386

Solution:
Given:
The ratio of the money distributed among Darshana, Swati, and Nivriti is 5 : 6 : 7
Darshna: Swati: Nivriti → 5x : 6x : 7x
But Nivriti has Rs. 539 with her.
Then, 7x→539
x = 539 ÷ 7
x = 77
The total sum of money = 5x + 6x + 7x = 18x
The total sum of money was distributed = 18 × 77 = 1386

So, the total sum of money distributed is INR 1,386. Hence, the **third option** is correct.

Q. 120 **Directions:** A person while buying a dress on sale spends Rs. 45 and saves Rs. 5, what is the percentage of his savings?

Option 1:
5%

Option 2:
10%

Option 3:
15%

Option 4:
20%

Correct Answer:
10%

Solution:
Given:
Cost Price = Rs. 45, Discount he gets (his savings) = Rs. 5

⇒ Marked price = Cost price + Discount
= 45 + 5 = Rs. 50
The percentage of his savings = $\frac{Savings}{Markedprice} \times 100$
= $\frac{5}{50} \times 100$
= 10%

Hence, the **second option** is correct.

Q. 121 **Directions:** If in a business, Alok gains 75% more profit than Akash, then by what percentage profit of Akash is less than the profit of Alok?

Option 1:
25%

Option 2:
12.63%

Option 3:
30.8%

Option 4:
42.85%

Correct Answer:
42.85%

Solution:
Given:
In a business, Alok gains 75% more profit than Akash.

Let us assume that Akash makes a profit of ₹ 100
The profit of Alok is 75% more than Akash.
Hence, profit of Akash = 100 + (75/100 × 100) = 100 + 75 = 175
So, profit earned by Alok over Akash = 175 – 75 = 75
% Profit earned by Alok over Akash = {(more profit earned by Alok) / total profit earned by Alok } × 100
= [(75 ÷ 175) × 100] %
= 0.42857 × 100%
= 42.85 %

Therefore, Akash earns 42.85% less profit than Alok. Hence, the **fourth option** is correct.

Q. 122 **Directions:** An office has a total of 95 employees. Each employee participates in one or more of three activities, i.e. music, dance, and skit, during the annual festival. The number of employees participating in only music is 20, whereas 14 participate in only skit, and 17 participate in only dance. A total of 8 employees participate in both music and skit only, 12 employees participate in all three activities, and 15 employees participate in both dance and skit only, whereas 9 employees participate in both music and dance only. Find the total number of employees participating in the skit.

Option 1:
58

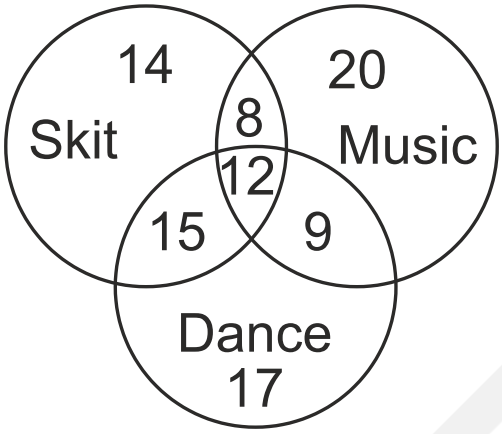
Option 2:
47

Option 3:
55

Option 4:
49

Correct Answer:
49

Solution:
Given:
Total number of employees = 95.
(I) Number of employees participating in only music = 20
(II) Number of employees participating in only skit =14
(III) Number of employees participating in only dance = 17
(IV) Number of employees participating in both music and skit = 8
(V) Number of employees participating in all three activities =12
(VI) Number of employees participating in both dance and skit = 15
(VII) Number of employees participating in both music and dance = 9
According to the instructions the venn diagram is given below:



Total employees participating in the skit = 14 + 8 + 12 + 15 = 49

So, the employees participating in the skit are equal to 49. Hence, the **fourth option** is correct.

Q. 123 **Directions:** A book that costs INR 40 is sold for 25% profit. If the cost of the book is increased by 10% and the profit percentage remains the same, what would be the new selling price of the same book?

Option 1:
INR 55

Option 2:
INR 58

Option 3:
INR 52

Option 4:
INR 48

Correct Answer:
INR 55

Solution:
Given:
The cost of the book = INR 40
The book which costs INR 40 is sold for 25% profit.
Thus, the actual cost of the book + 25% profit of the book
= 40 + (40 + 25) ÷ 100
= 40 + 10
= 50
The actual cost of the book with 25% = INR 50
Now, if the cost of the book is increased by 10% and the profit percentage remains the same,
The new selling price of the book = The actual cost of the book with 25% profit + Cost of the book is increased by 10%
New selling price = 50 + {(50 × 10) ÷ 100}
New selling price = 50 + 5
New selling price = INR 55

So, the new selling price of the book is INR 55. Hence, the **first option** is correct.