

31. From a group of boys and girls, 15 girls leave. They are then left 2 boys for each girl. After this, 45 boys leave. There are then 5 girls for each boy. Find the number of girls in the beginning

A. 40

B. 20

C. 32

D. 60

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Answer : Option A

Explanation :

Solution 1

Assume that initial number of boys = b

initial number of girls = g

15 girls leave and they are then left 2 boys for each girl

$$\Rightarrow 2(g - 15) = b$$

$$\Rightarrow 2g - b = 30 \text{ ---(Equation 1)}$$

After this, 45 boys leave. There are then 5 girls for each boy

$$5(b - 45) = (g - 15)$$

$$5b - g = 210 \text{ ---(Equation 2)}$$

$$\text{(Equation 2)} \times 2$$

$$\Rightarrow 10b - 2g = 420 \text{ ---(Equation 3)}$$

$$\text{(Equation 1)} + \text{(Equation 3)}$$

$$\Rightarrow 9b = 450$$

$$\Rightarrow b = 450/9 = 50$$

Substituting this value of b in Equation 1, we get

$$2g - 50 = 30$$

$$\Rightarrow 2g = 80$$

$$\Rightarrow g = 40$$

i.e., number of girls in the beginning = 40

Solution 2

Assume the number of boys at present = x

Then, the number of girls at present = 5x

Before the boys left, the number of boys were (x+45) and number of girls were 5x

$$\text{Hence, } 2(5x) = x + 45$$

$$\Rightarrow 10x = x + 45$$

$$\Rightarrow x = 5$$

$$\text{Number of girls in the beginning} = (5x + 15) = (5 \times 5 + 15) = 40$$

32. How many pieces of 85 cm length can be cut from a rod of 42.5 meters long?

A. 15

B. 20

C. 2

D. 50

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Here is the answer and explanation

Answer : Option D

Explanation :

$$\text{Number of pieces} = \frac{4250}{85} = \frac{850}{17} = 50$$

33. In a garden, there are 10 rows and 12 columns of mango trees. The distance between the two trees is 2 metres and a distance of one metre is left from all sides of the boundary of the garden. What is the length of the garden?

A. 30 m

B. 28 m

C. 26 m

D. 24 m

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Here is the answer and explanation

Answer : Option D

Explanation :

Between the 12 mango trees, there are 11 gaps and each gap has 2 meter length

Also, 1 meter is left from all sides of the boundary of the garden.

Hence, length of the garden = $(11 \times 2) + 1 + 1 = 24$ meter

34. In a garden, 26 trees are planted at equal distances along a yard 300 metres long, one tree being at each end of the yard. What is the distance between two consecutive trees?

A. 10

B. 20

C. 14

D. 12

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Here is the answer and explanation

Answer : Option D

Explanation :

26 trees have 25 gaps between them.

Length of each gap = $300/25 = 12$

i.e., distance between two consecutive trees = 12

35. A boy was asked to multiply a number by 22. He instead multiplied the number by 44 and got the answer 308 more than the correct answer. What was the number to be multiplied?

A. 16

B. 10

C. 14

D. 12

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Here is the answer and explanation

Answer : Option C

Explanation :

Let the number be x

$$22x + 308 = 44x$$

$$\Rightarrow 44x - 22x = 308$$

$$\Rightarrow 22x = 308$$

$$\Rightarrow x = 308/22 = 154/11 = 14$$

36. In an examination, a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts all 80 questions and secures 120 marks, How many questions does he answer correctly?

A. 30

B. 60

C. 50

D. 40

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Here is the answer and explanation

Answer : Option D

Explanation :

Let the number of correct answers be x

Then, number of wrong answers = (80 - x)

$$4x - (80 - x) = 120$$

$$\Rightarrow 4x - 80 + x = 120$$

$$\Rightarrow 5x = 200$$

$$\Rightarrow x = 200/5 = 40$$

i.e., he does 40 questions correctly