



Linear equations in one variable Ex 8.4 Q7

Answer :

Let the present age of Shikha = 'x' years.

So, the present age of Shikha's brother Ravish = (x + 3) years.

So, sum of their ages = x + (x + 3)

$$\Rightarrow x + (x + 3) = 37$$

$$\Rightarrow 2x + 3 = 37$$

Subtracting 3 from both sides, we get

$$\Rightarrow 2x + 3 - 3 = 37 - 3$$

$$\Rightarrow 2x = 34$$

Dividing both sides by 2, we get

$$\Rightarrow \frac{2x}{2} = \frac{34}{2}$$

$$\Rightarrow x = 17$$

So, the present age of Shikha = 17 years, and the present age of Ravish = x + 3 = 17 + 3 = 20 years.

Linear equations in one variable Ex 8.4 Q8

Answer :

Let the present age of Nilu = 'x' years.

Therefore, the present age of Nilu's mother, Mrs. Jain = (x + 27) years.

So, after 8 years,

Nilu's age = (x + 8), and Mrs. Jain's age = (x + 27 + 8) = (x + 35) years

$$\Rightarrow x + 35 = 2(x + 8)$$

Expanding the brackets, we get

$$\Rightarrow x + 35 = 2x + 16$$

Transposing x to RHS and 16 to LHS, we get

$$\Rightarrow 35 - 16 = 2x - x$$

$$\Rightarrow x = 19$$

So, the present age of Nilu = x = 19 years, and the present age of Nilu's mother = x + 27 = 19 + 27 = 46 years.

Linear equations in one variable Ex 8.4 Q9

Answer :

Let the present age of the son = 'x' years.

Therefore, the present age of his father = '4x' years.

So, after 16 years,

Son's age = (x + 16) and father's age = (4x + 16) years

ATQ:

$$\Rightarrow 4x + 16 = 2(x + 16)$$

$$\Rightarrow 4x + 16 = 2x + 32$$

Transposing 2x to LHS and 16 to RHS, we get

$$\Rightarrow 4x - 2x = 32 - 16$$

$$\Rightarrow 2x = 16$$

Dividing both sides by 2, we get

$$\Rightarrow \frac{2x}{2} = \frac{16}{2}$$

$$\Rightarrow x = 8$$

So, the present age of the son = x = 8 years, and the present age of the father = 4x = 4(8) = 32 years.

Linear equations in one variable Ex 8.4 Q10

Answer :

Let the age of the girl = 'x' years.

So, the age of her younger sister = (x - 4) years.

Thus, the age of the brother = (x - 4 - 4) years = (x - 8) years.

ATQ:

$$\Rightarrow (x - 4) + (x - 8) = 16$$

$$\Rightarrow x + x - 4 - 8 = 16$$

$$\Rightarrow 2x - 12 = 16$$

Adding 12 to both sides, we get

$$\Rightarrow 2x - 12 + 12 = 16 + 12$$

$$\Rightarrow 2x = 28$$

Dividing both sides by 2, we get

$$\Rightarrow \frac{2x}{2} = \frac{28}{2}$$

$$\Rightarrow x = 14$$

Thus, the age of the girl = x = 14 years, the age of the younger sister = x - 4 = 14 - 4 = 10 years,

and the age of the younger brother = x - 8 = 14 - 8 = 6 years.

Linear equations in one variable Ex 8.4 Q11

Answer :

Let the number of sea shells found by Sandy = 'x'.

So, the number of sea shells found by Anita = (x + 5).

The number of sea shells found by Shella = 2 (x + 5).

According to the question,

$$\Rightarrow x + 2 (x + 5) = 16$$

$$\Rightarrow x + 2x + 10 = 16$$

$$\Rightarrow 3x + 10 = 16$$

Subtracting 10 from both sides, we get

$$\Rightarrow 3x + 10 - 10 = 16 - 10$$

$$\Rightarrow 3x = 6$$

Dividing both sides by 3, we get

$$\Rightarrow \frac{3x}{3} = \frac{6}{3}$$

$$\Rightarrow x = 2$$

Thus, the number of sea shells found by Sandy = x = 2, the number of sea shells found by Anita = x + 5

= 2 + 5 = 7,

and the number of sea shells found by Shella = 2(x + 5) = 2(2 + 5) = 2(7) = 14.

Linear equations in one variable Ex 8.4 Q12

Answer :

Let the number of marbles with Pandy = 'x'.

So, the number of marbles with Andy = '2x'.

Thus, the number of marbles with Sandy = $\frac{1}{2} (x + 2x) = \frac{3x}{2}$.

According to the question,

$$\frac{3x}{2} - 115 = 110$$

Adding 115 to both sides, we get

$$\frac{3x}{2} - 115 + 115 = 110 + 115$$

$$\frac{3x}{2} = 225$$

Multiplying both sides by 2, we get

$$\frac{3x}{2} \times 2 = 225 \times 2$$

$$3x = 450$$

Dividing both sides by 3, we get

$$\frac{3x}{3} = \frac{450}{3}$$

$$x = 150$$

So, Pandy has 150 marbles, Andy has $2x = 2(150) = 300$ marbles, and Sandy has $\frac{3x}{2} = \frac{3 \times 150}{2} = 225$ marbles.

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