

Pair of Linear Equations in Two varibles Ex 3.9 Q8

Let the present age of father be x years and the present ages of his two children's be y and z years.

The present age of father is three times the sum of the ages of the two children's. Thus, we have

$$x = 3(y+z)$$

$$\Rightarrow y + z = \frac{x}{3}$$

After 5 years, father's age will be (x+5) years and the children's age will be (y+5) and (z+5) years.

Thus using the given information, we have

$$x+5=2\{(y+5)+(z+5)\}$$

$$\Rightarrow x+5=2(y+5+z+5)$$

$$\Rightarrow x = 2(y+z) + 20 - 5$$

$$\Rightarrow x = 2(y+z)+15$$

So, we have two equations

$$y + z = \frac{x}{3}$$

$$x = 2(y+z) + 15$$

Here x, y and z are unknowns. We have to find the value of x.

Substituting the value of (y+z) from the first equation in the second equation, we have

By using cross-multiplication, we have

$$x = \frac{2x}{3} + 15$$

$$\Rightarrow x - \frac{2x}{3} = 15$$

$$\Rightarrow x(1-\frac{2}{3}) = 15$$

$$\Rightarrow \frac{x}{3} = 15$$

$$\Rightarrow x = 15 \times 3$$

$$\Rightarrow x = 45$$

Hence, the present age of father is 45 years.

Pair of Linear Equations in Two varibles Ex 3.9 Q9 Answer:

Let the present age of father be x years and the present age of his son be y years.

After 2 years, father's age will be (x+2) years and the age of son will be (y+2) years. Thus using the given information, we have

$$x+2=3(y+2)+8$$

$$\Rightarrow x + 2 = 3y + 6 + 8$$

$$\Rightarrow x-3y-12=0$$

Before 2 years, the age of father was (x-2) years and the age of son was (y-2) years. Thus using the given information, we have

$$x-2=5(y-2)$$

$$\Rightarrow x - 2 = 5y - 10$$

$$\Rightarrow x - 5y + 8 = 0$$

So, we have two equations

$$x-3y-12=0$$

$$x - 5y + 8 = 0$$

Here x and y are unknowns. We have to solve the above equations for x and y.

$$\frac{x}{(-3)\times8 - (-5)\times(-12)} = \frac{-y}{1\times8 - 1\times(-12)} = \frac{1}{1\times(-5) - 1\times(-3)}$$

$$\Rightarrow \frac{x}{-24 - 60} = \frac{-y}{8 + 12} = \frac{1}{-5 + 3}$$

$$\Rightarrow \frac{x}{-84} = \frac{-y}{20} = \frac{1}{-2}$$

$$\Rightarrow \frac{x}{84} = \frac{y}{20} = \frac{1}{2}$$

$$\Rightarrow x = \frac{84}{2}, y = \frac{20}{2}$$

$$\Rightarrow x = 42, y = 10$$
Hence, the present one of father in A we are and the present one of father in A we are and the present one of father in A we are and the present one of father in A where A and A is a second the present one of father in A where A is a second the present one of father in A is a second the present one of father in A is a second the present one of father in A is a second the present one of father in A is a second the present one of father in A is a second the present one of father in A is a second the present one of father in A is a second the present one of father in A is a second the present one of father in A is a second the present one of A is a second the present of A

Hence, the present age of father is $\boxed{42}$ years and the present age of son is $\boxed{10}$ years.

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