



Pair of Linear Equations in Two variables Ex 3.11 Q5

Answer :

Let the money with A be Rs x and the money with B be Rs y .

If A gives Rs 30 to B, Then B will have twice the money left with A, According to the condition we have,

$$y + 30 = 2(x - 30)$$

$$y + 30 = 2x - 60$$

$$0 = 2x - y - 60 - 30$$

$$0 = 2x - y - 90 \dots (i)$$

If B gives Rs 10 to A, then A will have thrice as much as is left with B,

$$x + 10 = 3(y - 10)$$

$$x + 10 = 3y - 30$$

$$x - 3y + 10 + 30 = 0$$

$$x - 3y + 40 = 0 \dots (ii)$$

By multiplying equation (ii) with 2 we get, $2x - 6y + 80 = 0$

By subtracting (ii) from (i) we get,

By substituting $y = 34$ in equation (i) we get

$$x = \frac{124}{2}$$

$$x = 62$$

Hence the money with A be **Rs. 62** and the money with B be **Rs. 34**

Pair of Linear Equations in Two variables Ex 3.11 Q6

Answer :

Let us take the A examination room will be x and the B examination room will be y

If 10 candidates are sent from A to B, the number of students in each room is same. According to the above condition equation will be

$$y + 10 = x - 10$$

$$0 = x - y - 10 - 10$$

$$x - y - 20 = 0 \dots (i)$$

If 20 candidates are sent from B to A, the number of students in A is double the number of students in B, then equation will be,

$$x + 20 = 2(y - 20)$$

$$x + 20 = 2y - 40$$

$$x + 20 - 2y + 40 = 0$$

$$x - 2y + 20 + 40 = 0$$

$$x - 2y + 60 = 0 \dots (ii)$$

By subtracting the equation (i) from (ii) we get, $y = 80$

Substituting $y = 80$ in equation (i), we get

Hence **100** candidates are in A examination Room,

80 candidates are in B examination Room.

Pair of Linear Equations in Two variables Ex 3.11 Q7

Answer :

A man can alone finish the work in x days and one boy alone can finish it in y days then

$$\text{One mans one days work} = \frac{1}{x}$$

$$\text{One boys one days work} = \frac{1}{y}$$

$$\text{2men one day work} = \frac{2}{x}$$

$$\text{7boys one day work} = \frac{7}{y}$$

Since 2 men and 7 boys can finish the work in 4 days

$$4\left(\frac{2}{x} + \frac{7}{y}\right) = 1$$

$$\frac{8}{x} + \frac{28}{y} = 1 \dots (i)$$

Again 4 men and 4 boys can finish the work in 3 days

$$3\left(\frac{4}{x} + \frac{4}{y}\right) = 1$$

$$\frac{12}{x} + \frac{12}{y} = 1 \dots (ii)$$

Putting $\frac{1}{x} = u$ and $\frac{1}{y} = v$ in equation (i) and (ii) we get

$$8u + 28v = 1$$

$$12u + 12v = 1$$

$$8u + 28v = 1 \dots (iii)$$

$$12u + 12v = 1 \dots (iv)$$

By using cross multiplication we have

Now,

$$u = \frac{1}{15}$$

$$\frac{1}{x} = \frac{1}{15}$$

$$x = 15$$

and

$$v = \frac{1}{60}$$

$$\frac{1}{y} = \frac{1}{60}$$

$$y = 60$$

Hence, one man alone can finish the work in 15 days and one boy alone can finish the work in

60 days.

Pair of Linear Equations in Two variables Ex 3.11 Q8

Answer :

Let $\angle A = x^\circ$, $\angle B = (3x - 2)^\circ$, $\angle C = y^\circ$ and

$$\angle C - \angle B = 9^\circ$$

$$\Rightarrow \angle C = 9^\circ + \angle B$$

$$\Rightarrow \angle C = 9^\circ + 3x^\circ - 2^\circ$$

$$\Rightarrow \angle C = 7^\circ + 3x^\circ$$

Substitute $\angle C = y^\circ$ in above equation we get ,

$$y^\circ = 7^\circ + 3x^\circ$$

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\Rightarrow x^\circ + (3x^\circ - 2^\circ) + (7^\circ + 3x^\circ) = 180^\circ$$

$$\Rightarrow 7x^\circ + 5^\circ = 180^\circ$$

$$\Rightarrow 7x^\circ = 180^\circ - 5^\circ = 175^\circ$$

$$\Rightarrow x^\circ = \frac{175^\circ}{7} = 25^\circ$$

$$\angle A = x^\circ = 25^\circ$$

$$\angle B = (3x - 2)^\circ = 3(25^\circ) - 2^\circ = 73^\circ$$

$$\angle C = (7^\circ + 3x^\circ) = 7^\circ + 3(25^\circ) = 82^\circ$$

$$\angle A = 25^\circ, \angle B = 73^\circ, \angle C = 82^\circ$$

Hence, the answer.

***** END *****