Pair of Linear Equations in Two varibles Ex 3.6 Q5

Answer :

Given:

(i) Cost of 3 bags and 4 pens = Rs. 257.

(ii) Cost of 4 bags and 3 pens = Rs. 324.

To Find: Cost of 1 bag and 10 pens.

Suppose, the cost of 1 bag = Rs. x.

and the cost 1 pen = Rs. y.

According to the given conditions, we have

$3x + 4y = 257$,

$3x + 4y - 257 = 0$ .... (1)

$4x + 3y = 324$

$4x + 3y - 324 = 0$ ...... (2)

Solving equation 1 and 2 by cross multiplication

$$\frac{x}{-1296+771} = \frac{-y}{-972+1028} = \frac{1}{9-16}$$

$$\frac{x}{-525} = \frac{-y}{56} = \frac{1}{-7}$$

$$x = \frac{-525}{-7}$$

$$= 75$$

$\therefore$ cost of 1 bag = Rs. 75.

cost of 1 bag = Rs. 75.

$$y = \frac{-56}{-7}$$

$$= 8$$

$\therefore$ cost of 1 pen = Rs. 8.

cost of 10 pens = Rs. 80.

Total cost of 1 bag and 10 pens = Rs. 155

Hence total cost of 1 bag and 10 pens = Rs. 155

Pair of Linear Equations in Two varibles Ex 3.6 Q6

Answer :

Given:

(i) Cost of 5 books and 7 pens = Rs. 79.

(ii) Cost of 7 books and 5 pens = Rs. 77.

To find: Cost of 1 book and 2 pens.

Suppose the cost of 1 book = Rs x.

and the cost of 1 pen = Rs y.

According to the given conditions, we have

$5x + 7y = 79$

$5x + 7y - 79 = 0$ ...... (1)

$7x + 5y = 77$,

$5x + 7y - 77 = 0$ ...... (2)

Thus we get the following system of linear equation,

$5x + 7y - 79 = 0$ and

$5x + 7y - 77 = 0$.

$$\frac{x}{-539 + 385} = \frac{-y}{-385 + 553} = \frac{1}{25 - 49}$$

$$\frac{x}{-144} = \frac{-y}{-168} = \frac{1}{-24}$$

$$x = \frac{-144}{-24}$$

$$\boxed{x = 6}$$

$$\frac{-y}{-385 + 553} = \frac{1}{25 - 49}$$

$$\frac{-y}{168} = \frac{1}{-24}$$

$$y = \frac{-168}{-24}$$

$$\boxed{y = 7}$$

Hence, the cost of 1 book = Rs 6

and the cost of 1 pen = Rs 7.

Therefore the cost of 2 pen = Rs 14.

Total cost of 1 book and 2 pens = 14 + 6 = 20

Total cost of 1 book and 2 pens = Rs. 20

Hence total cost of 1 book and 2 pens = Rs. 20

********** END *********