



Pair of Linear Equations in Two variables Ex 3.11 Q13

Answer :

Let the fixed charges of hostel be $Rs. x$ and the cost of food charges be $Rs. y$ per day

According to the given condition we have,

$$x + 20y = 1000 \dots (i)$$

$$x + 26y = 1180 \dots (ii)$$

Subtracting equation (ii) from equation (i) we get

$$\begin{array}{r} \cancel{x} + 20y = 1000 \\ \cancel{x} - 26y = -1180 \\ \hline -6 = -180 \\ y = \frac{-180}{-6} \\ y = 30 \end{array}$$

Putting $y = 30$ in equation (i) we get

$$\begin{array}{r} x + 20y = 1000 \\ x + 20 \times 30 = 1000 \\ x + 600 = 1000 \\ x = 1000 - 600 \\ x = 400 \end{array}$$

Hence, the fixed charges of hostel is **Rs 400**.

The cost of food per day is **Rs 30**.

Pair of Linear Equations in Two variables Ex 3.11 Q14

Answer :

Let perimeter of rectangular garden will be $2(l + b)$. if half the perimeter of a garden will be $36m$

$$\begin{array}{r} \frac{1}{2} \times 2(l + b) = 36 \\ (l + b) = 36 \dots (i) \end{array}$$

When the length is four more than its width then $(b + 4)$

Substituting $l = b + 4$ in equation (i) we get

$$\begin{array}{r} l + b = 36 \\ b + 4 + b = 36 \\ 2b = 36 - 4 \\ 2b = 32 \\ b = \frac{32}{2} \\ b = 16 \end{array}$$

Putting $b = 16$ in equation (i) we get

$$\begin{array}{r} (l + b) = 36 \\ l + 16 = 36 \\ l = 36 - 16 \\ l = 20 \end{array}$$

Hence, the dimensions of rectangular garden are **width = 16 m** and **length = 20 m**

Pair of Linear Equations in Two variables Ex 3.11 Q15

Answer :

We know that the sum of supplementary angles will be 180° .

Let the larger supplementary angles will be ' y '.

Then, $x + y = 180^\circ \dots (i)$

If larger of supplementary angles exceeds the smaller by 18 degree, According to the given condition. We have,

$x = y + 18 \dots (ii)$

Substitute $x = y + 18$ in equation (i) , we get,

$$x + y = 180^\circ$$

$$y + 18 + y = 180^\circ$$

$$2y + 18 = 180^\circ$$

$$2y = 180^\circ - 18^\circ$$

$$2y = 162^\circ$$

$$y = \frac{162^\circ}{2}$$

$$y = 81^\circ$$

Put $y = 81^\circ$ equation (ii) , we get,

$$x = y + 18$$

$$x = 81 + 18$$

$$x = 99^\circ$$

Hence, the larger supplementary angle is 99° .

The smaller supplementary angle is 81° .

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