



Exercise 3E

Question 42:

Let the fixed charges of taxi per day be Rs x and charges for travelling for 1km be Rs y .

For travelling 110 km, he pays

$$\text{Rs } x + \text{Rs } 110y = \text{Rs } 1130$$

$$x + 110y = 1130 \text{ ---(1)}$$

For travelling 200 km, he pays

$$\text{Rs } x + \text{Rs } 200y = \text{Rs } 1850$$

$$x + 200y = 1850 \text{ ---(2)}$$

Subtracting (1) from (2), we get

$$90y = 1850 - 1130 = 720$$

$$y = 720/90 = 8$$

Putting $y = 8$ in (1),

$$x + 110 \times 8 = 1130$$

$$x = 1130 - 880 = 250$$

Hence, fixed charges = Rs 250

And charges for travelling 1 km = Rs 8

Question 43:

Let the fixed hostel charges be Rs x and food charges per day be Rs y respectively.

For student A:

Student takes food for 25 days and he has to pay: Rs 3500

$$\text{Rs } x + \text{Rs } 25y = \text{Rs } 3500$$

$$x + 25y = 3500 \text{ ---(1)}$$

For student B:

Student takes food for 28 days and he has to pay: Rs 3800

$$\text{Rs } x + \text{Rs } 28y = \text{Rs } 3800$$

$$\text{or } x + 28y = 3800 \text{ ---(2)}$$

Subtracting (1) from (2), we get

$$3y = 3800 - 3500$$

$$3y = 300$$

$$y = 100$$

Putting $y = 100$ in (1),

$$x + 25 \times 100 = 3500$$

$$\text{or } x = 3500 - 2500$$

$$\text{or } x = 1000$$

Thus, fixed charges for hostel = Rs 1000 and

Charges for food per day = Rs 100

Question 44:

Let the length = x meters and breadth = y meters

Then,

$$x = y + 3$$

$$x - y = 3 \text{ ----(1)}$$

Also,

$$(x + 3)(y - 2) = xy$$

$$3y - 2x = 6 \text{ ----(2)}$$

Multiplying (1) by 2 and (2) by 1

$$-2y + 2x = 6 \text{ ---(3)}$$

$$3y - 2x = 6 \text{ ---(4)}$$

Adding (3) and (4), we get

$$y = 12$$

Putting $y = 12$ in (1), we get

$$x - 12 = 3$$

$$x = 15$$

$$x = 15, y = 12$$

Hence length = 15 metres and breadth = 12 metres

***** END *****