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
Rs x + Rs 110y = Rs 1130
x + 110y = 1130 ---(1)
For travelling 200 km, he pays
Rs x + Rs 200y = Rs 1850
x + 200y = 1850 ---(2)
Subtracting (1) from (2), we get
90y=1850-1130=720
y = 720/90 = 8
Putting y = 8 in (1),
x + 110 × 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 25days and he has to pay: Rs 3500
Rs x + Rs 25y = Rs 3500
x + 25y = 3500 ---(1)
For student B:
Student takes food for 28days and he has to pay: Rs 3800
Rs x + Rs 28y = Rs 3800
or x + 28y = 3800 ---(2)
Subtracting (1) from (2), we get
3y = 3800 - 3500
3y= 300
y = 100
Putting y = 100 in (1),
x + 25 × 100 = 3500
or x = 3500 - 2500
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 ----(1)
Also,
(x + 3)(y - 2) = xy
3y - 2x = 6 ----(2)
Multiplying (1) by 2 and (2) by 1
-2y + 2x = 6 ---(3)
3y - 2x = 6 ---(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 **********