

Exercise 3E

## Question 1:

Let the cost of 1 chair be Rs x and the cost of one table be Rs. y

The cost of 5 chairs and 4 tables = Rs(5x + 4y) = Rs. 2800

$$5x + 4y = 2800 - (1)$$

The cost of 4 chairs and 3 tables = Rs(4x + 3y) = Rs. 2170

$$4x + 3y = 2170 - (2)$$

Multiplying (1) by 3 and (2) by 4, we get

$$15x + 12y = 8400 - (3)$$

$$16x + 12y = 8680 - (4)$$

Subtracting (3) and (4), we get

$$x = 280$$

Putting value of x in (1), we get

$$5 \times 280 + 4y = 2800$$

or 
$$1400 + 4y = 2800$$

or 
$$4y = 1400$$

$$y = \frac{1400}{4} = 350$$

Thus, cost of 1 chair = Rs. 280 and cost of 1 table = Rs. 350

## Ouestion 2:

Let the cost of a pen and a pencil be Rs x and Rs y respectively

Cost of 37 pens and 53 pencils = Rs(37x + 53y) = Rs 820

$$37x + 53y = 820 - (1)$$

Cost of 53 pens and 37 pencils = Rs(53x + 37y) = Rs 980

$$53x + 37y = 980 - (2)$$

Adding (1) and (2), we get

$$90x + 90y = 1800$$

$$x + y = 20 - (3)$$

$$y = 20 - x$$

Putting value of y in (1), we get

$$37x + 53(20 - x) = 820$$

$$37x + 1060 - 53x = 820$$

$$16x = 240$$

$$x = \frac{240}{16} = 15$$

From (3), 
$$y = 20 - x = 20 - 15 = 5$$

$$x = 15, y = 5$$

Thus, cost of a pen = Rs 15 and cost of pencil = Rs 5

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