



Exercise 14D

Question 6:

$$\text{mean of the given number} = \frac{(7+9+11+13+x+21)}{6}$$

$$\begin{aligned} [\because \text{Mean} &= \frac{\text{Sum of the observation}}{\text{Number of observation}}] \\ &= \frac{(61+x)}{6} \end{aligned}$$

But mean = 13 (given)

$$\therefore \frac{61+x}{6} = 13$$

$$\Rightarrow 61+x=78$$

$$\Rightarrow x=78-61=17$$

\therefore the value of $x = 17$

Question 7:

Let the given numbers be x_1, x_2, \dots, x_{24}

$$\Rightarrow \text{Mean} = \frac{(x_1 + x_2 + \dots + x_{24})}{24}$$

$$\therefore \frac{x_1 + x_2 + \dots + x_{24}}{24} = 35$$

$$\Rightarrow x_1 + x_2 + \dots + x_{24} = 840 \dots (i)$$

The new numbers are $(x_1 + 3), (x_2 + 3), \dots, (x_{24} + 3)$

\therefore Mean of the new numbers

$$\begin{aligned} &= \frac{(x_1 + 3) + (x_2 + 3) + \dots + (x_{24} + 3)}{24} = \frac{840 + 72}{24} [\text{using (i)}] \\ &= \frac{912}{24} = 38 \end{aligned}$$

\therefore The new mean = 38

Question 8:

Let the given numbers be x_1, x_2, \dots, x_{20}

Then, the mean of these numbers =

$$\therefore \frac{x_1 + x_2 + \dots + x_{20}}{20} = 43$$

$$\Rightarrow x_1 + x_2 + \dots + x_{20} = 860 \quad \dots(i)$$

The new number are $(x_1 - 6) + x_2 - 6) \dots (x_{20} - 6)$

\therefore The mean of the new numbers

$$= \frac{(x_1 - 6) + (x_2 - 6) + \dots + (x_{20} - 6)}{20}$$

$$= \frac{860 - 120}{20} \quad \dots[using (i)]$$

$$= \frac{740}{20} = 37$$

\therefore The new mean=37

***** END *****