

Q 21) The sum of 50 observations and sum of their sq is 245 and 1401 resp. Later on, 3 obs, 2, 3 and 5 were found incorrect. If the incorrect obs are removed, then corrected variance is?

$$\begin{aligned} \rightarrow \sum x_i \text{ (corrected)} &= 245 - (2 + 3 + 5) \\ &= 235 \end{aligned}$$

$$\begin{aligned} \sum x_i^2 \text{ (corrected)} &= 1401 - (4 + 9 + 25) \\ &= 1363 \end{aligned}$$

$$\begin{aligned} \therefore \sigma^2 &= \frac{1363}{47} - \left( \frac{235}{47} \right)^2 \\ &= 29 - 25 \\ &= \underline{\underline{4}} \end{aligned}$$

Formula

$$\sigma^2 = \frac{\sum x_i^2}{n} - \left( \frac{\sum x_i}{n} \right)^2$$

Difficulty  $\rightarrow$  Medium