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Mathematics

9709/52

Paper 5 Probability & Statistics 1

May/June 2020

Question No (1)

- 1 For n values of the variable x , it is given that

$$\Sigma(x - 50) = 144 \quad \text{and} \quad \Sigma x = 944.$$

Find the value of n .

Solution:

$$\Sigma(x - 50) = 144, \quad \Sigma x = 944$$

$$\text{Let } y = x - 50$$

$$\Sigma y = \Sigma(x - 50)$$

if $y = ax + b$ then

$$\bar{y} = a\bar{x} + b \quad (\text{Mean of variable})$$

and

$$S.D_y = a S.D_x \quad SD = \text{Standard deviations}$$

$$\bar{y} = \bar{x} - 50 \quad \text{mean value}$$

$$\frac{\Sigma y}{n} = \frac{\Sigma x}{n} - 50 \quad \because \bar{x} = \frac{\Sigma x}{n}$$

$$\frac{144}{n} = \frac{944}{n} - 50 \quad \because \Sigma y = \Sigma(x - 5) = 144$$

$$\frac{144}{n} - \frac{944}{n} = -50 \quad \text{and} \quad \Sigma x = 944$$

$$\frac{-800}{n} = -50$$

$$n = \frac{800}{50} = 16$$

$n = 16$ Ans

