

**TOPIC**

Engineering Probability and Statistics – Section II – Question 11

**QUESTION**

The sample standard deviation of 5 data points 1, 3, 4, 6, and 6 is

- (A)  $3\sqrt{2/5}$
- (B)  $3/\sqrt{2}$
- (C) 3
- (D) 5

**HINT**

Sample standard deviation

$$s = \sqrt{\frac{\sum(x_i - \bar{x})^2}{n-1}}.$$

**SOLUTION**

$$\begin{aligned}n &= 5 \\ \bar{x} &= \frac{1 + 3 + 4 + 6 + 6}{5} \\ &= 4 \\ s^2 &= \frac{[(1-4)^2 + (3-4)^2 + (4-4)^2 + (6-4)^2 + (6-4)^2]}{(5-1)} \\ &= 9/2.\end{aligned}$$

Therefore,

$$s = 3/\sqrt{2}.$$

**ANSWER**

(B)

**CONTRIBUTOR**

Michael Weng