

Q.

In a Quant test of CAT exam, the population standard deviation is known to be 100. A sample of 25 test takers has a mean of 520. Construct a 80% G.I. about mean?

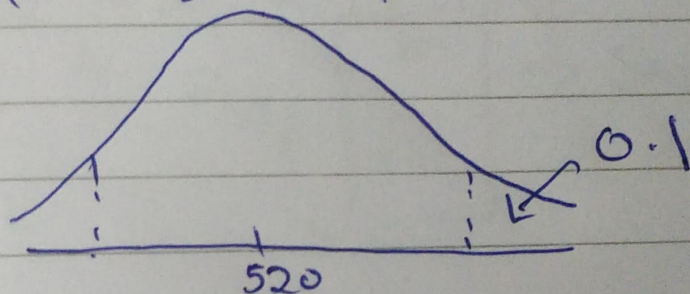
Ans:-

$$\sigma = 100$$

$$n = 25$$

$$\bar{x} = 520$$

$$\alpha = 1 - C.I. = 1 - 0.8 = 0.2$$



$$\bar{x} \pm Z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$$

$$\Rightarrow 520 \pm Z_{0.1} \frac{100}{\sqrt{25}}$$

$$\Rightarrow 520 \pm Z_{0.1} \times 20$$

$$\Rightarrow 520 \pm 1.28 \times 20$$

$$\Rightarrow \frac{494.4}{\text{lower}}$$

$$\frac{545.6}{\text{higher}}$$

