

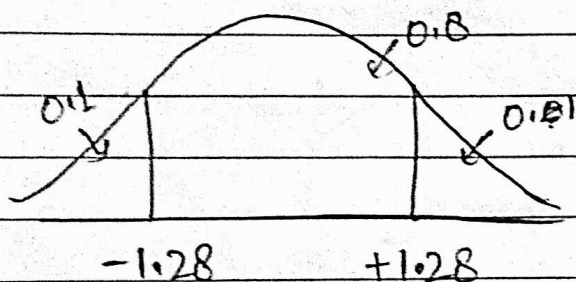
Q: In the Quant test of CAT exam the population standard deviation is known to be 100.

A Sample of 25 test takers has a mean of 520. Construct a 80% C.I. about mean.

Ans:  $\sigma = 100$   $n = 25$   $\bar{x} = 520$  C.I. 0.8  $\alpha = 0.2$ .

$$Z_{\alpha/2} = Z_{0.2/2} = Z_{0.1}$$

$$Z_{0.1} = 1.28$$



$$\begin{aligned}\text{Lower fence} &= \bar{x} - Z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}} \\ &= 520 - 1.28 \times \frac{100}{\sqrt{25}} \\ &= 494.4.\end{aligned}$$

$$\begin{aligned}\text{Higher fence} &= \bar{x} + Z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}} \\ &= 520 + 1.28 \times \frac{100}{\sqrt{25}} \\ &= 545.6\end{aligned}$$

