Home Assignment

Q In the Quant test of CAT exam the population S.D. is known to be 100. a sample of 25 test taken has a mean of 520. Construct a 80% C.I. about the mean?

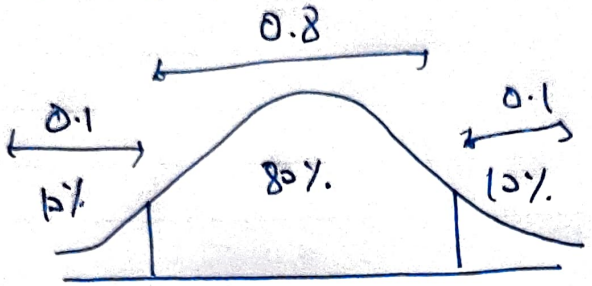
$\sigma = 100$

$n = 25$

$\bar{x} = 520$

C.I. = 80%

Z-test



$\alpha = 1 - C.I.$

$= 1 - 0.8$

$= 0.2$

C.I. $\Rightarrow$ Point Estimate $\pm$ Margin of Error

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

$= 520 \pm Z_{\frac{0.2}{2}} * \frac{100}{\sqrt{25}}$

$Z_{0.1}$ = Two methods

(in -ve Z-test) Value for 0.1 $= -1.28$

(in +ve Z-test) Value for $(1 - 0.1) = 0.9 = 1.28$

Lower Fence $= 520 - 1.28 * 20 = 494.4$

Higher Fence $= 520 + 1.28 * 20 = 545.6$