Q→ In a Quant test of ~~Maths~~ CAT Exam, the population standard deviation is 100. A sample of 25 test takers has a mean of 520. Construct a 80% Confidence Interval about the mean?
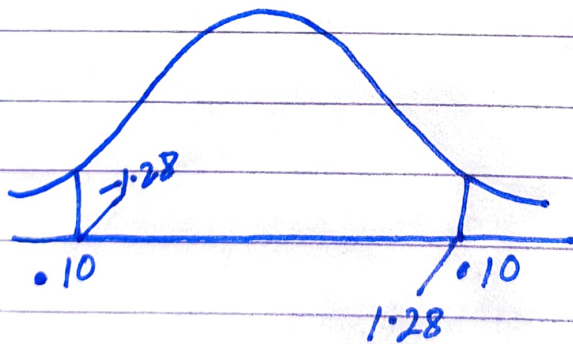
Soln

$$\delta = 100 \quad , \quad n = 25$$
$$\bar{X} = 520 \quad , \quad CI = 80\%.$$

Significance Value $(\alpha) = 1 - 0.8$
$$\alpha = .20.$$

Now, **Lower Fence** $= 520 - 1.28 \left(100/\sqrt{25}\right)$

$$= 520 - 1.28 \times \left(\frac{100}{\sqrt{25}}\right)$$

$$= 520 - 1.28 \times 20$$

$$= 520 - 25.6$$

$$= 494.4 \quad \underline{Ans}$$

Higher Fence $= \bar{x} + Z\%_2 \times \left(\dfrac{6}{\sqrt{n}}\right)$

$= 520 + 1.28 \times \left(\dfrac{100}{\sqrt{25}}\right)$

$= 520 + 1.28 \times 20$

$= 520 + 25.6$

$= 545.6$ <u>Ans.</u>

·1%. 494·4 $\overline{x}$ ·1%. 545.6