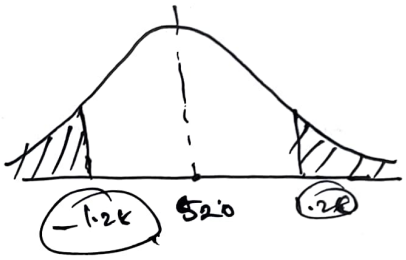
Assignment - 3rd July

Q CAT exam ; population std. deviation is known as 100.

A sample of 25 test takers has a mean of 520. Construct ~~95%~~ 80% CI.

→ $\sigma = 100$; $\bar{x} = 520$; CI = 80%.

$\Rightarrow \alpha = 1 - .80 = 0.20$



$$\text{Lower fence} = \underset{\text{point estimate}}{\bar{x}} - z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}}$$

$$= \bar{x} - z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}}$$

$$= 520 - z_{0.10} \cdot \frac{100}{\sqrt{25}}$$

$$= 520 - 1.28 \times \frac{100}{5} \quad 20$$

$$= 520 - 25.6$$

$$= 494.4$$

$$\text{Higher fence} = \text{point estimate} + z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}}$$

$$= 520 + 1.96 \times 20$$

$$= 545.2$$