Assignment - 4

Q-:1 In the Quant test of CAT exam, the population standard deviation is known to be 100. A sample of 25 test taker has a mean of 520. Construct a 80% C.I about the mean?

$\Rightarrow \sigma = 100, \quad n = 25, \quad \bar{x} = 520, \quad CI = 80\%$

$\alpha = 1 - C.I$

$\Rightarrow 1 - 0.8 \Rightarrow 0.2$

$Z_{\alpha/2} \Rightarrow Z_{\frac{0.2}{2}} \Rightarrow 1.29$

Lower fence $\Rightarrow \bar{x} - Z_{\alpha/2}\left[\frac{\sigma}{\sqrt{n}}\right]$

$\Rightarrow 520 - (1.29)\left[\frac{100}{\sqrt{25}}\right]$

$\Rightarrow 520 - (1.29)\left[\frac{100}{\sqrt{25}}\right]$

$\Rightarrow 520 - (1.29)\left[\frac{100}{5}\right]20$

$\Rightarrow 520 - 25.8$

$\Rightarrow 494.2$

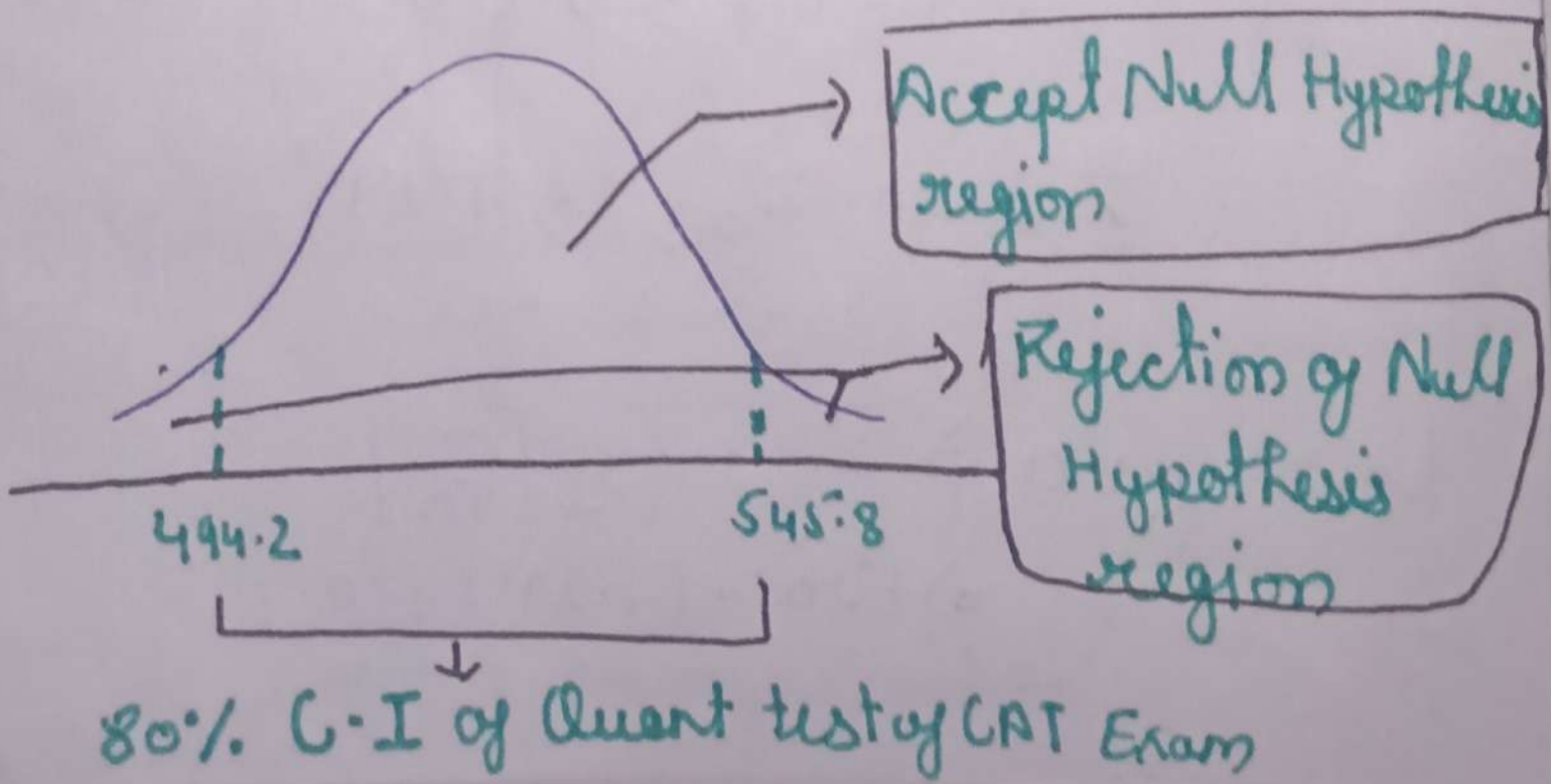
Higher fence $\Rightarrow \bar{X} + Z_{\alpha/2}\left[\frac{\sigma}{\sqrt{n}}\right]$

$\Rightarrow 520 + (1.29)\left[\frac{100}{\sqrt{25}}\right]$

$\Rightarrow 520 + (1.29)\left[\frac{100}{5}\right]20$

$\Rightarrow 520 + 25.8$

$\Rightarrow 545.8$



80% C.I of Quant test of CAT Exam