Statistic Assignment 1.

Q.2)

In a quant test of the CAT Exam the population standard deviation is known to be 100. A sample of 25 tests taken has a mean of 520. Construct an 80% CI about the mean.

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

$H_0 \Rightarrow \mu = 520$

$H_1 \Rightarrow \mu \neq 520$

$$\bar{x} \pm \frac{z}{2}\left(\frac{\sigma}{\sqrt{n}}\right)$$

Lower Fience

$= 520 - (1.282)\left(\frac{100}{\sqrt{25}}\right)$

$= 494.36$

Higher Fience

$= 520 + (1.282)\left(\frac{100}{\sqrt{25}}\right)$

$= 545.64$

Range = [494.36 ⟷ 545.64]

H_0 = The value between this value Accept

H_1 = The value between this value Reject

$H_0 = \mu = 520$

$H_1 = \mu \neq 520$