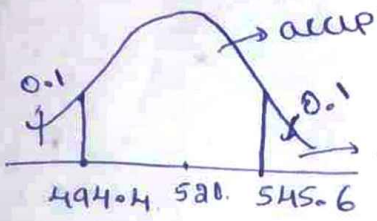
1) In the quant test of CAT exam, the population standard deviation is known to be 100. A sample of 25 test takers has a mean of 520. construct a 80% C.I about mean?

Ans:- $\sigma = 100$, $n = 25$ $\bar{x} = 520$.



$\alpha = 1 - C.I$

$\alpha = 1 - 0.8 = \underline{0.2}$

$z_{\frac{0.2}{2}} = z_{0.1} = 1.28$.

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

$= 520 - 1.28 \cdot \frac{100}{\sqrt{25}}$

$= 520 - 1.28 \times 20$.

L.f $= \underline{494.4}$

higher limit $= \bar{x} + z_{\alpha/2}\frac{\sigma}{\sqrt{n}}$

$= 520 + 1.28 \cdot \frac{100}{\sqrt{25}}$

$= 520 + 1.28 \times 20$.

H.f $= \underline{545.6}$