3rd July [illegible]

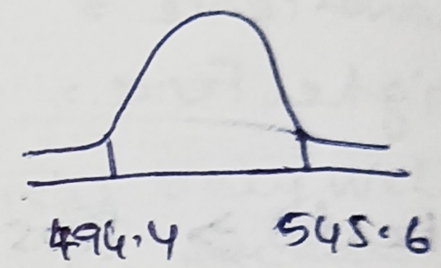
Q1) In the quant test of CAT exam, the population standard deviation is known to be 100. A sample of 25 test takers has a mean of 520. Construct a 90% C.I about mean

$\sigma = 100, \quad n = 25, \quad \bar{x} = 520 \quad \alpha = 1 - 0.8 = 0.2$

$z_{\alpha/2} = z_{0.1} = -1.28$

Lower Fence = $520 - 1.28(20) = 494.4$

Higher Fence = $520 + 1.28(20) = 545.6$



Q2) Given 100K employees

Sample 500 employees → 300 XL, 200 L

Assuming

C.I = 95%. $\quad \bar{x} = 10,000, \quad \sigma = 5000$

$\alpha = 0.05 \quad z_{\alpha/2} = 1.96 \quad n = 100K$

Lower Fence = $10,000 - \{1.96\}\left(\frac{5000}{\sqrt{105}}\right)$

$= 10,000 - 1.96(23.123)$

$= 9,954.679$

Higher Fence = 10,045.32