Assignment 1

In the final test of a CAT exam the population SD is known to be 100. A sample of 25 class students has a mean of 520. Construct a 80% confidence (CI) interval about the mean?

$\sigma = 100 \quad n = 25$

$\bar{x} = 520$ To find 80% of CI

Formula,

Point Estimate ± Margin of Error

Point Estimate = $\bar{x} = 520$

Hence

$$\bar{x} \pm Z_{\alpha/2} * \frac{\sigma}{\sqrt{n}}$$

To find; $Z_{\alpha/2}$ → we need significance values

Sig = $(1 - CI) = 1 - 0.8 = 0.2$

Also $Z_{\alpha/2} = Z_{0.1}$

$1 - 0.1 = 0.9$

The Z value of 0.9 in Z table is 1.29

So the range lies between -1.29 to 1.29