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.

Given:-

σ:-100

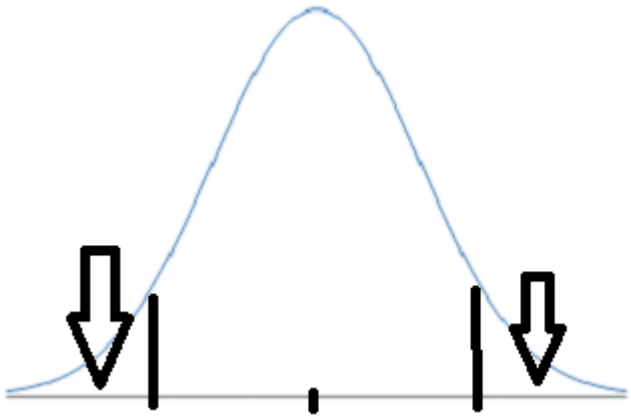
n :- 25

$\vec{x}$:- 520

CI=80%

1-0.8=0.2

0.1 and 0.1 will be divided to both part



520

We have to Calculate the lower fence and the higher fence.

Lower fence = $\overline{x}$-$Z_{\frac{\alpha}{2}}\frac{\sigma}{\sqrt{n}}$ Higher fence = $\overline{x+}\ Z_{\frac{\alpha}{2}}\frac{\sigma}{\sqrt{n}}$

To check the value of 0.1 part of the curve get the area of the rest part

1-0.1=0.9

Check in Z score table for 0.9 which equates the value of $Z_{0.9}$ = 1.29

Calculate the equation by putting up these values.

Therefore ,lower fence will be 494.2

And higher fence will be 545.8 respectively