

Assignment - 4

Name - Aditi Mondal

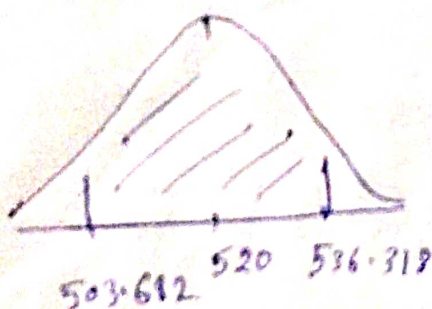
Course - Data Analytics

Submission date -

Q1)

In the quant test of CAT exam, the population standard deviation is known to be 100. A sample of 25 takers has a mean of 520. Construct a 80% confidence interval about mean.

$$\sigma = 100, \quad \bar{x} = 520 \quad n = 25$$



$$1 - 0.8$$

$$= 0.2$$

Point Estimator \pm Margin of Error
= Parameter

$$1 - .1$$

$$= .90$$

(2 tail)

$$Z(.9) = .8159$$

$$\text{Lower bound} = \bar{x} - Z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$$

$$= 520 - .8159 \times \frac{100}{5}$$

16.118

$$= 520 - .8159 \times 20$$

$$= 503.612$$

$$\text{Higher Fense} = \bar{x} + z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$$

$$= 520 + 1.9159 \times 20$$

$$= 536.318$$

∴ The higher Fense is 536.318 and
the lower Fense is 503.682.