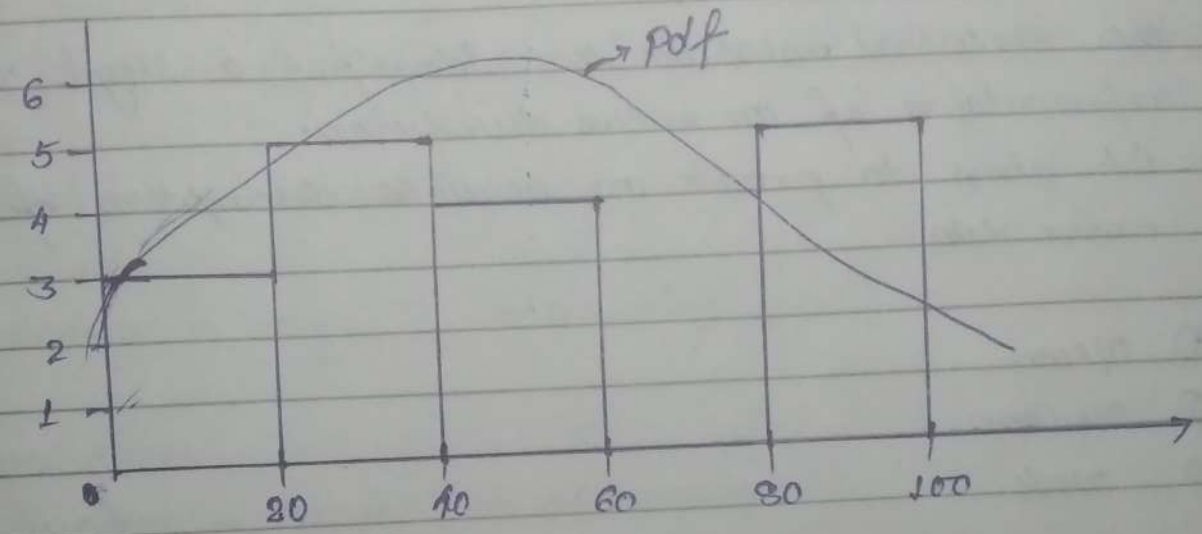
Assignment

19-06-22

Ques) {10, 13, 18, 22, 27, 32, 38, 40, 45, 51, 56, 57, 88, 90, 92, 94, 99

bins = 5

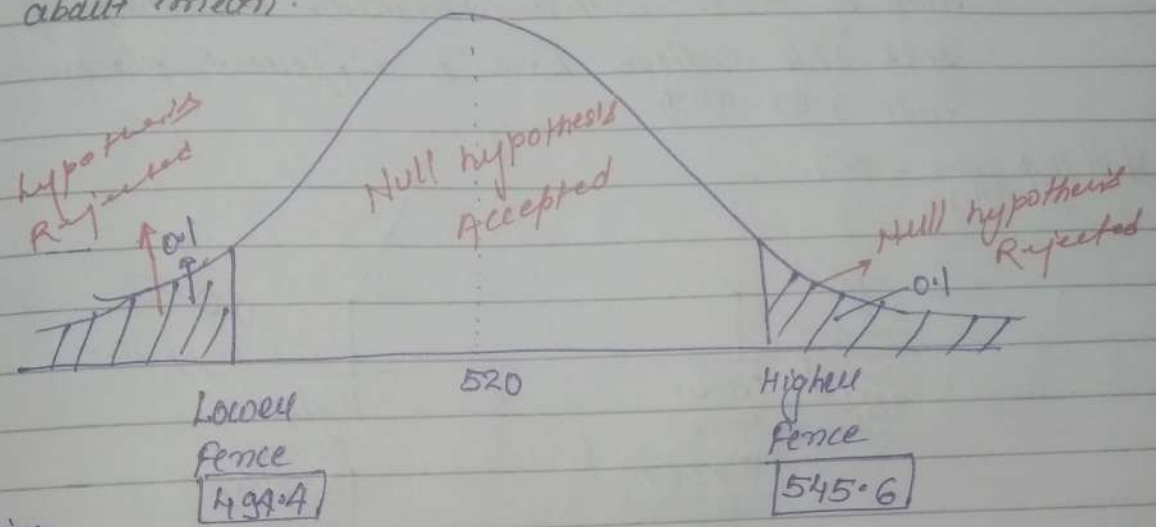
bin size = 20



$$\text{mean} = \frac{872}{17} = 51.29$$

Assignment

Ques) In the Quant test of CAT, the population standard deviation is known to be 100. A sample of 25 test taken has a mean of 520. construct a 80% CI about mean.



Given,

$\sigma = 100$

$n = 25 \qquad \bar{x} = 520 \qquad C.I = 80\%$

significant value $= 1 - .80 = 0.2$

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

$$= 520 - Z_{\frac{0.2}{2}} * \frac{100}{\sqrt{25}} \qquad = 520 - 1.28 \times 20$$

$$= 520 - 25.6$$

$$= 494.4$$

$$\text{Higher fence} = \bar{x} + Z_{\frac{\alpha}{2}} * \frac{\sigma}{\sqrt{n}}$$

$$= 520 + 25.6$$

$$= 545.6$$

Assignment:

Ques: colleges in town A has 85% placement rate. A new college was recently opened and it was found that a sample of 150 students had a placement rate of 85%. with a standard deviation of 4%. Does this college have a different placement rate?

CI = 95%

Given, Ha → $\mu = 85\%$

$H_1 \rightarrow \mu \neq 85\%$ (two tailed test)

for sample, $n = 150$ Dof = $n-1 = 149$

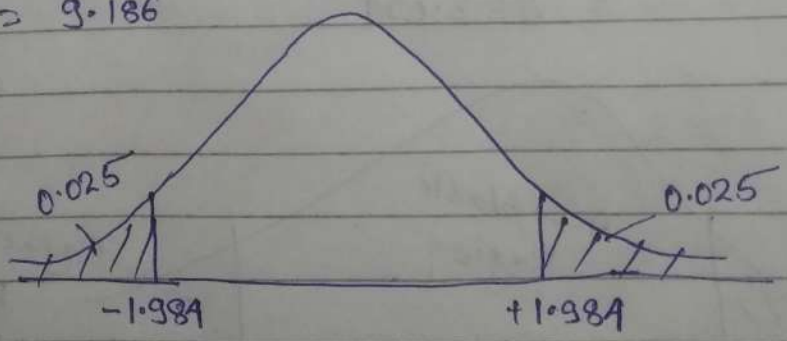
$\bar{x} = 85\%$ s.d(s) = 4%

CI = 95% = 0.95

$\alpha = 0.05$

$$t\text{statistical} = \frac{\bar{x} - \mu}{\frac{s.d}{\sqrt{n}}} = \frac{88 - 85}{\frac{4}{\sqrt{150}}} = \frac{3}{4} \times \sqrt{150} = 9.186$$

tstatistical = 9.186



From t-table, $\alpha = 0.05$, Dof = 149, two tailed test

$t = 1.984$

As $t_{statistical} \neq \{-1.984 \text{ and } +1.984\}$
so, we have to reject the null hypothesis and accept the alternate hypothesis.

conclusion:
yes, the new college has a different placement rate as compare to the all other colleges in town.

9.186