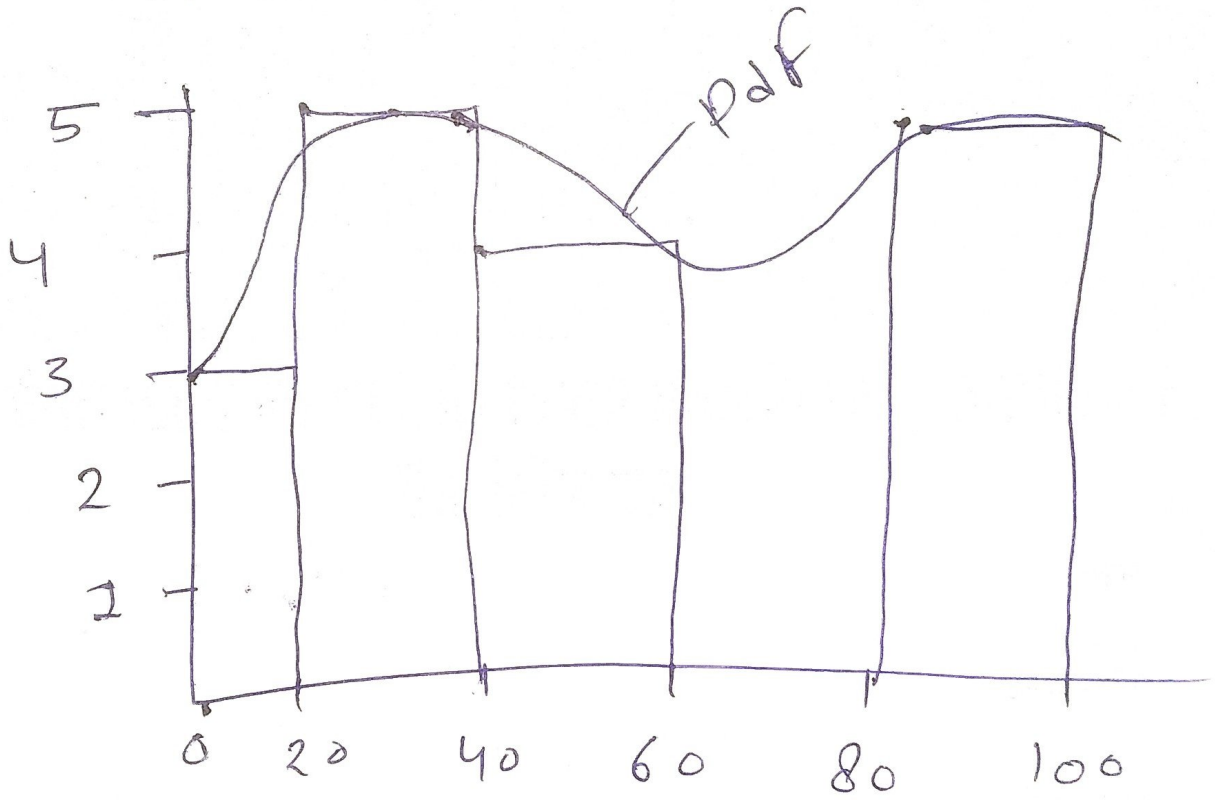
Assignment-: 1

Eg = 10, 13, 18, 22, 27, 32, 38, 40, 45, 51, 56, 57, 88, 90, 92, 94, 99.

bins = 5

bin size = 20



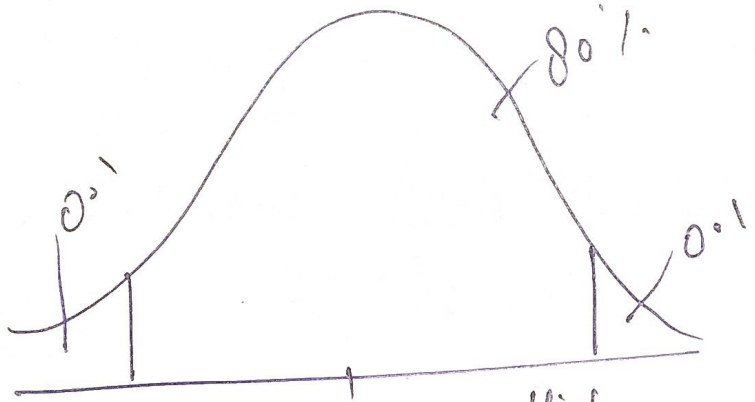
Question-2

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

C.I = 80%.

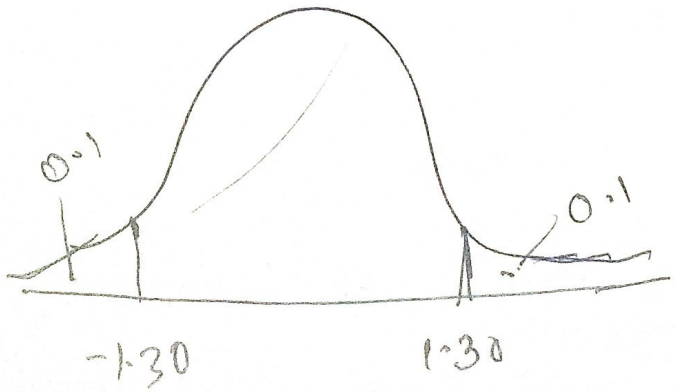
significance value = $1 - C.I. = 1 - 80\% = 1 - 0.8$

$\Rightarrow 0.2$



Point Extimeate $\pm$ margin of error

$\Rightarrow \bar{x} \pm z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$



$\therefore z_{\frac{0.2}{2}} = z_{0.1}$

$\Rightarrow 1 - 0.1$

$\Rightarrow 0.9$

Lower fence $= \bar{x} - z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$

$= 520 - 1.30 \frac{100}{\sqrt{25}}$

$= 520 - 1.30 \times 20$

$= 494$

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

$= 520 + 1.30 \times 20$

$= 546$

Assignment -5

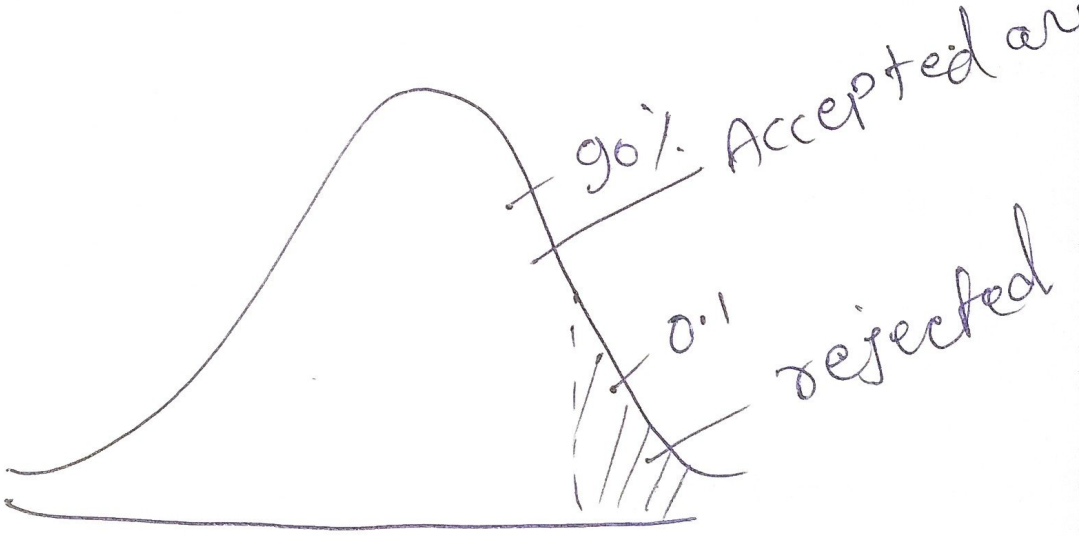
$H_0 P_0 \leq 60\%$

$H_2 P_0 \neq 60\%$ $\quad \alpha = 0.1$

$n = 250$, $x = 170$

$$\hat{P} = \frac{x}{n} = \frac{170}{250} = 0.68$$

$$q_0 = 1 - P_0 = 1 - 0.6 = 0.4$$



* z-test with proportion

$$\text{Z-test} = \frac{\hat{P} - P_0}{\sqrt{\frac{P_0 q_0}{n}}}$$

$$= \frac{0.68 - 0.6}{\sqrt{\frac{0.4 \times 0.6}{250}}}$$

$$\Rightarrow \frac{0.08}{\sqrt{0.00096}} = \frac{0.08}{0.031}$$

$$\Rightarrow 2.51806$$

reject the null hypothesis

There is no enough evidence to support the idea that the vechicle owner in ABC city is 60% or less at 10% significance level.

Question-4

2, 2, 3, 4, 5, 5, 5, 6, 7, 8, 8, 8, 8, 8, 9, 9, 10, 11, 11, 12

$= \frac{99}{\cancel{100}\,5} \times \cancel{20}$

$\Rightarrow$ 19.8 index $\Rightarrow$ avg $\Rightarrow \frac{19^{th} + 20^{th}}{2}$

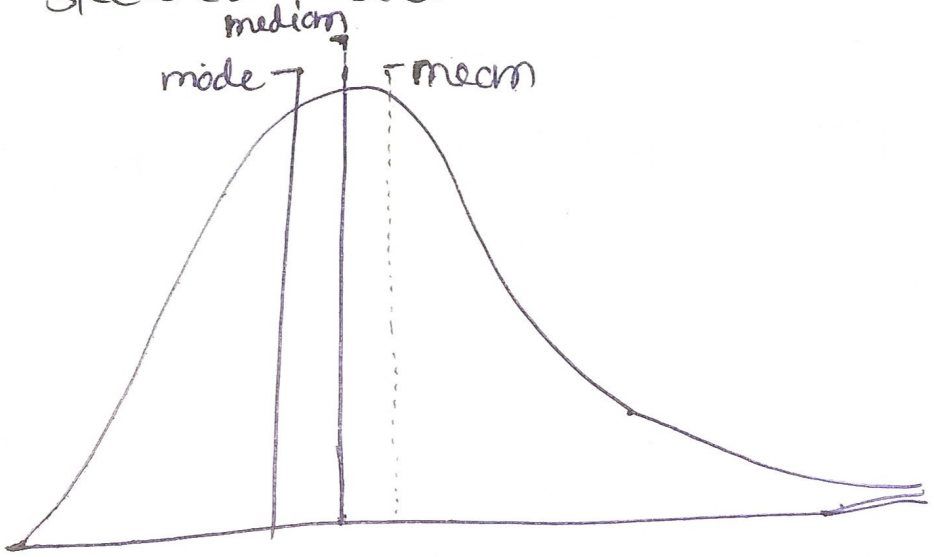
$\Rightarrow \frac{11+12}{2}$

$\Rightarrow \frac{23}{2}$

$\Rightarrow 11.5$

Question - 5

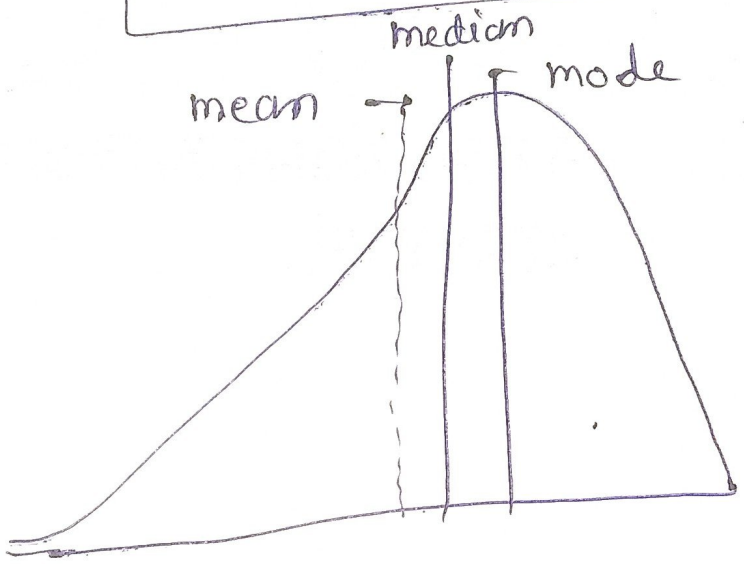
(1) IN Right skewed data, the mean will be greater than median and median will be greater than mode. This is the relationship between mean, mode, median in Right skewed data.



positive skew

(2) IN Left skewed data, The mode will be greater than median and median greater than mode, this is the relationship between mean, mode median in Left ~~Skew~~ Skewed ~~data~~ data.

mode > median > mean



Negative Skew