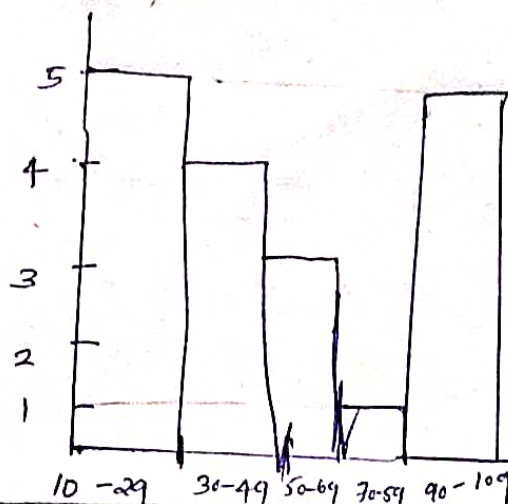


① Plotting Histogram

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

10 - 29	5
30 - 49	4
50 - 69	3
70 - 89	1
90 - 109	4



② $\sigma = 100$ $n = 25$ $\bar{x} = 520$

Hence population std deviation is given we use z test

CI = 80% $\therefore \alpha = 1 - 0.80 = \underline{\underline{0.2}}$

Point Estimate \pm margin of Error

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

$$520 \pm Z_{0.1}$$

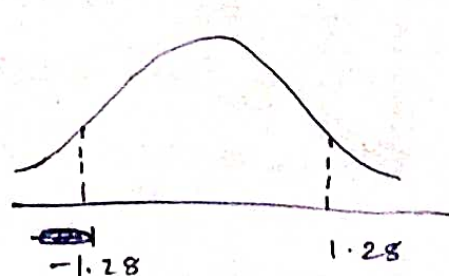
Higher Fence

$$\Rightarrow 520 + 1.282 \times \frac{100}{\sqrt{25}}$$

$$= \underline{\underline{528.108}}$$

Lower Fence

$$\Rightarrow 520 - 1.282 \times \frac{100}{\sqrt{25}} = \underline{\underline{511.892}}$$



Z value for -0.1
 $\Rightarrow -1.28$

Z value for 0.1
 $\Rightarrow \underline{\underline{1.282}}$

③ $H_0 \Rightarrow P_0 \leq 60$ (Null hypothesis) \Rightarrow % of citizens owns vehicle is 60% or less

a) $H_1 \Rightarrow P_1 > 60$ (Alternate hypothesis) \Rightarrow % of citizens owns vehicle is more than 60%

b) $\hat{p} = \frac{n}{n} = \frac{178}{250}$ $P = 0.6$

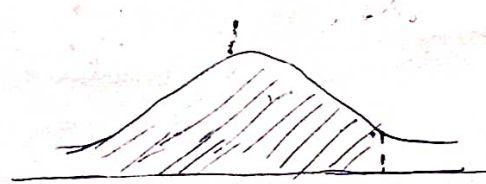
$$q_0 = 1 - p \Rightarrow 1 - 60 = 0.40$$

$$z \text{ test} \Rightarrow \frac{\hat{p} - p}{\sqrt{\frac{p_0 q_0}{n}}} \Rightarrow \frac{0.68 - 0.6}{\sqrt{\frac{0.6 \times 0.4}{250}}} = \frac{0.08}{\sqrt{\frac{0.24}{250}}}$$

$$= \frac{0.08}{0.30} = \frac{2.58}{1} \Rightarrow \underline{\underline{2.581}}$$

$$= 1.28$$

✓ $\alpha = 0.10$, one Tail.



$$z \text{ value} \Rightarrow 1.28$$

Since the z table value is less than the test statistic
Rejects the null hypothesis
Hence there is no evidence to support vehicle owners claim

④

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

99 Percentile

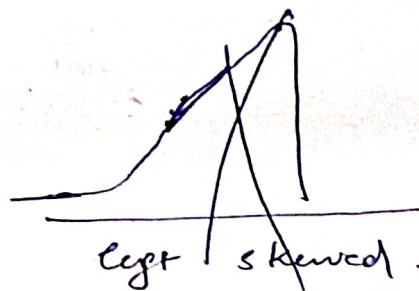
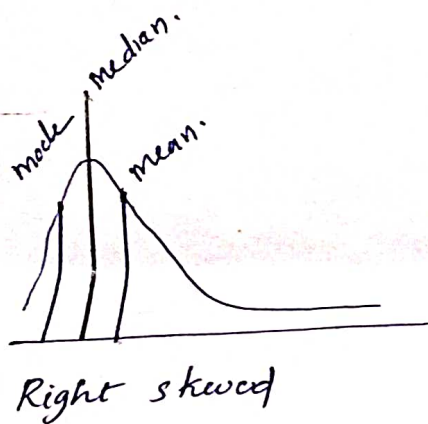
⇒ The Number ~~lies~~ ~~below~~ is approximately equals
to 12

$$\text{Index} = \frac{\text{Percentile} \times (n+1)}{100}$$

$$= \frac{99}{100} \times (n+1)$$

= 20.29
Number at Index 20.

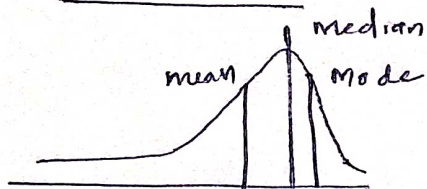
⑤



In Right skewed

⇒ Mode < Median < Mean.

in left skewed



where $\text{Mean} < \text{Median} < \text{Mode}$.