

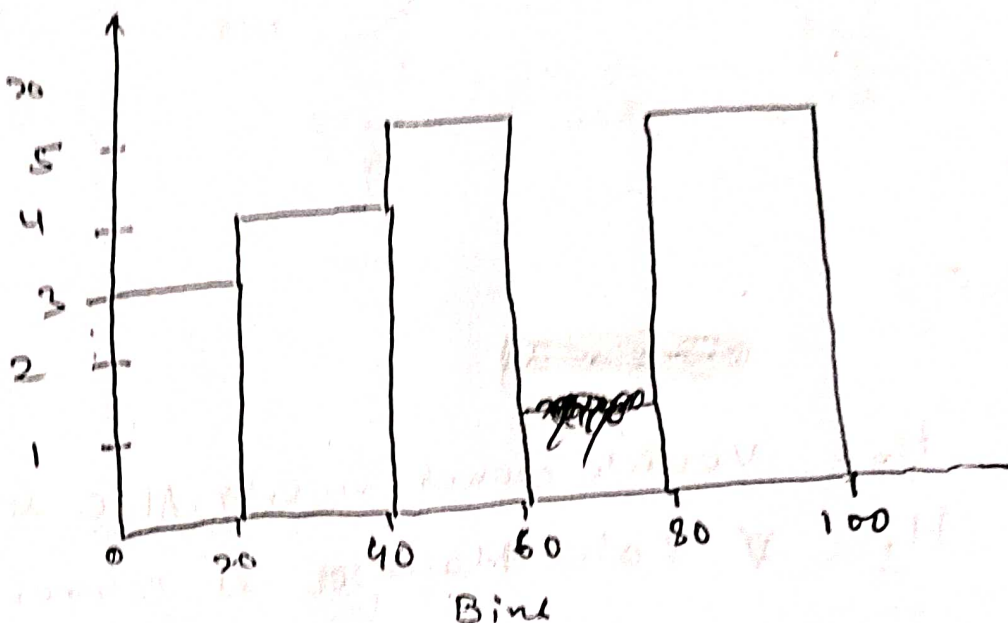
Assignment Statistics

Sol. 1

10, 13, 18, 22, 27, 22, 28, 40, 45, 51, 56, 67, 88, 90, 92, 94, 97

Bin = 5

Bin Size = $\frac{100}{5} = 20$



Sol. 2

$\sigma = 100$

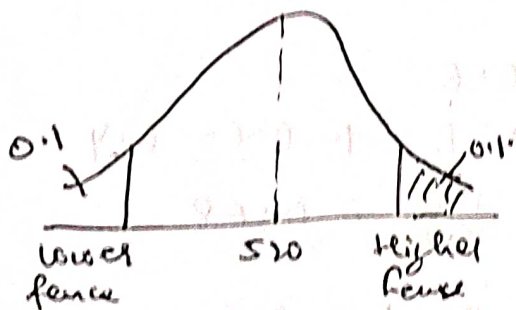
$n = 25$

$\bar{x} = 520$

$CI = 80\%$

$\alpha = 1 - CI = 0.2$

Here ' σ ' is given so, we will use 'Z test'



$Z_{\frac{0.2}{2}} = Z_{0.1} = 1.29$

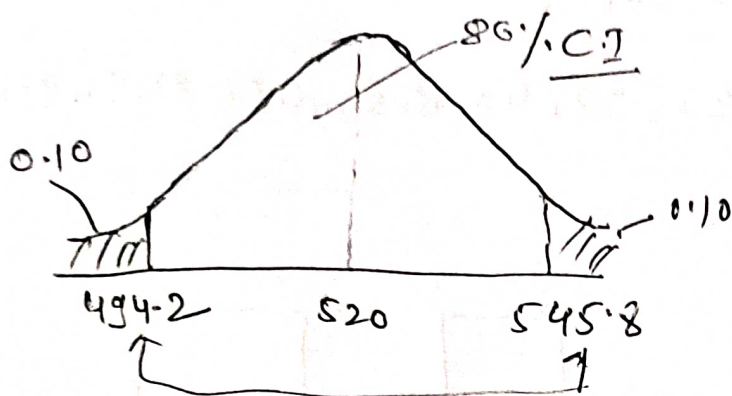
$1 - 0.10 = 0.90$

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

$= 520 - 1.29 \frac{100}{\sqrt{25}} = \boxed{494.2}$

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

$= 520 + 1.29 \frac{100}{\sqrt{25}} = \boxed{545.8}$



Soln 3



H_0 = vehicle owner in City ABC is 60% or less (P_0)

H_1 = Sales Manager is correct. ($P_0 \neq 60$)

$n = 250$ $x = 170$

$$\alpha = 0.10 \quad 1 - 0.05 = 0.95$$

We use Z-test with proportion formulae.

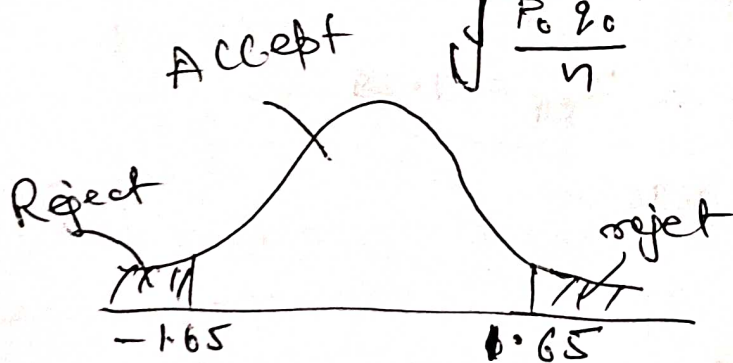
$$Z_{test} = \frac{\hat{p} - P_0}{\sqrt{\frac{P_0 Q_0}{n}}}$$

$$P_0 = 0.6$$

$$Q_0 = 1 - P_0 = 1 - 0.6 = 0.4$$

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

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



$$Z_{test} = 0.26 > -1.65$$

Conclusion = we Accept the Null Hypothesis

Sol 4

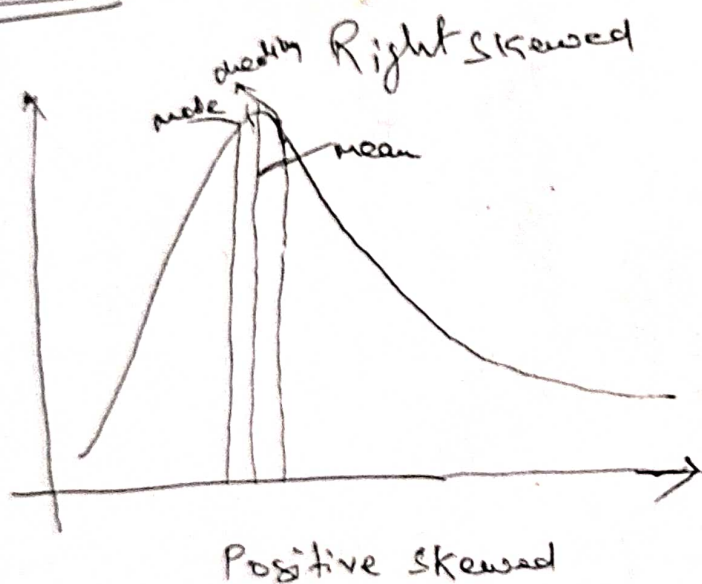
2, 2, 3, 4, 5, 5, 5, 6, 7, 8, 8, 9, 9, 9, 9, 10, 11, 11, 12
11.5

99 percentile

$$= \frac{99}{100} \times n+1 = \frac{99}{100} \times (20+1) = 20.79 \text{ index}$$

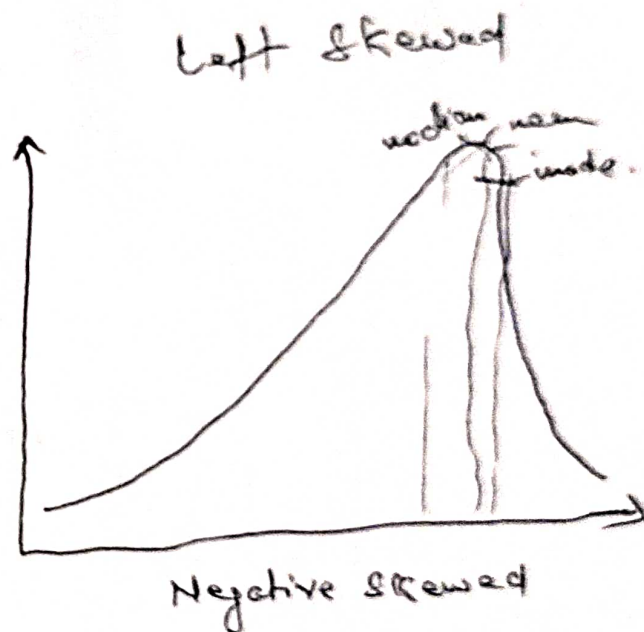
$$= 11.5$$

Sol 5



$$\text{mean} > \text{median} > \text{mode}$$

V



$$\text{mode} > \text{median} > \text{mean}$$