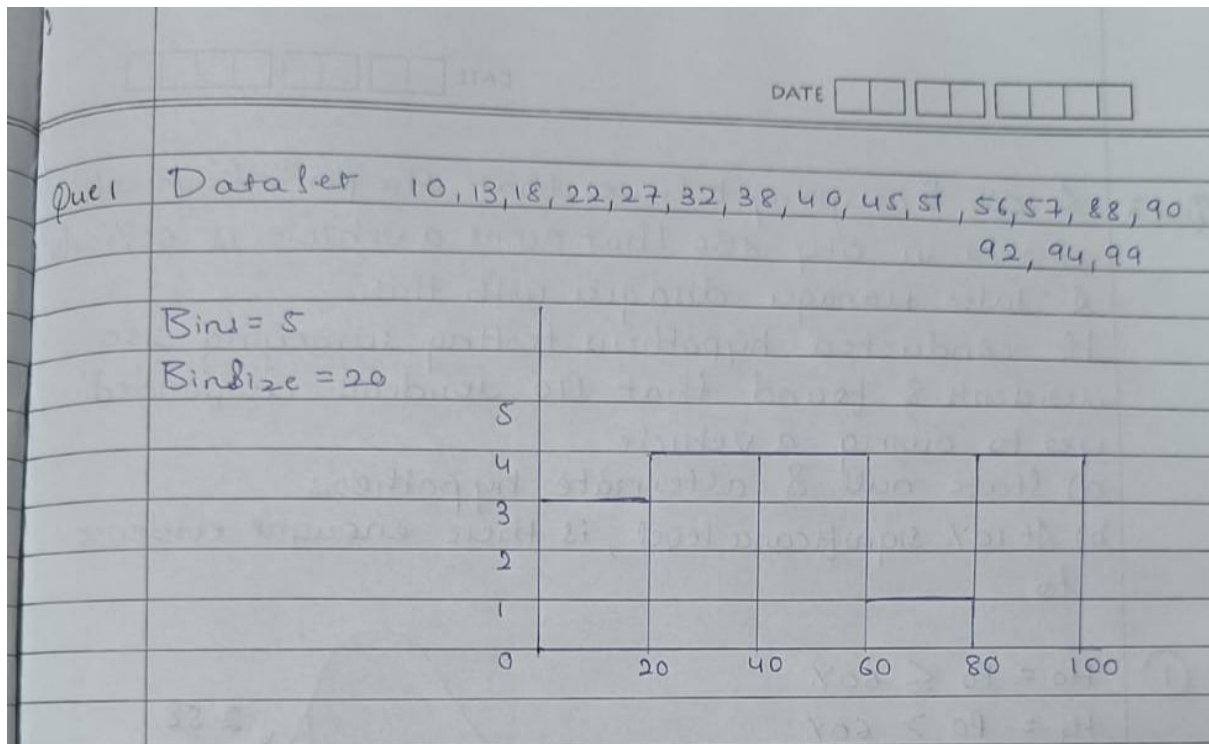
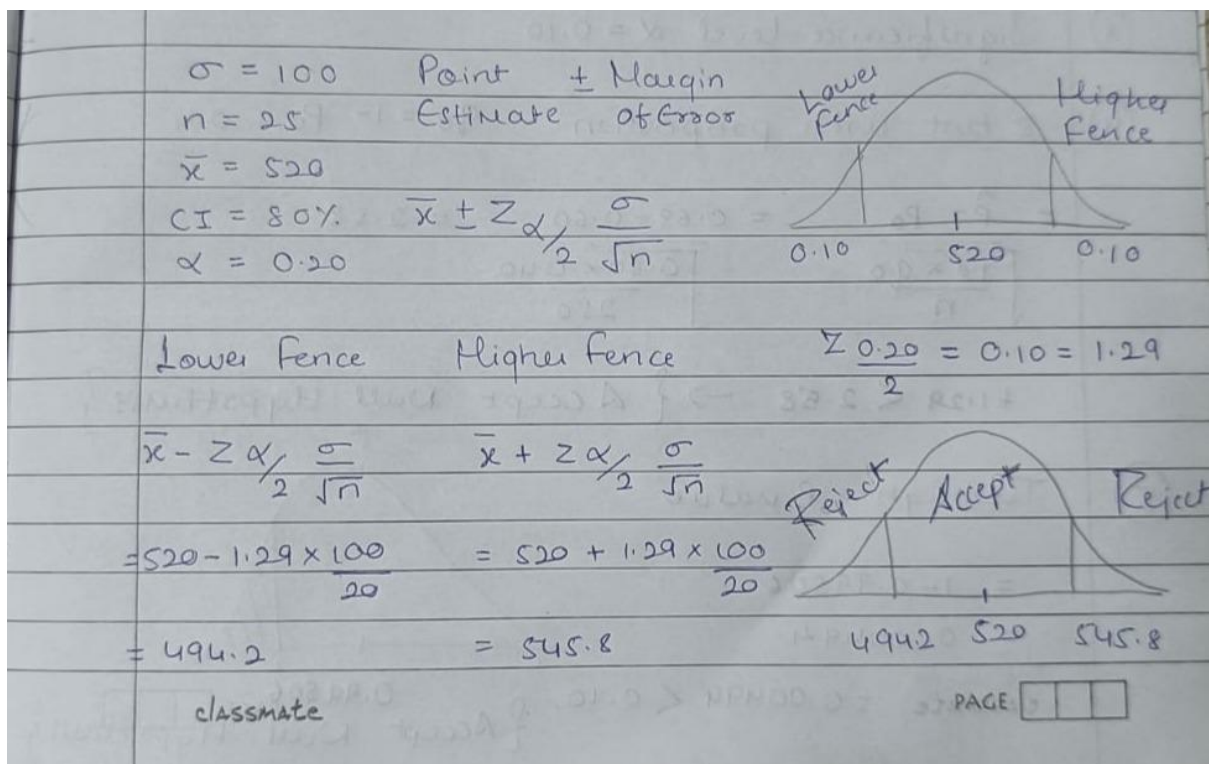


Que 1) Plot a histogram,

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



Que 2) In a quant test of the CAT Exam, the population standard deviation is known to be 100. A sample of 25 tests taken has a mean of 520. Construct an 80% CI about the mean.



Que 3) A car believes that the percentage of citizens in city ABC that owns a vehicle is 60% or less. A sales manager disagrees with this. He conducted a hypothesis testing surveying 250 residents & found that 170 residents responded yes to owning a vehicle.

- State the null & alternate hypothesis.
- At a 10% significance level, is there enough evidence to support the idea that vehicle owner in ABC city is 60% or less.

①  $H_0 = P_0 \leq 60\%$   
 $H_1 = P_0 > 60\%$

②  $\frac{170}{250} \times 100 = 68\%$  0.68

③ Significance level  $\alpha = 0.10$

④ Z test with proportion  $q_0 = 1 - P_0 = 0.4$

$$= \frac{\hat{P} - P_0}{\sqrt{\frac{P_0 \times q_0}{n}}} = \frac{0.68 - 0.60}{\sqrt{\frac{0.60 \times 0.40}{250}}} = 2.58$$

+1.29 < 2.58  $\rightarrow$  { Accept Null Hypothesis }

⑤ Through P value

$$= 1 - 0.99506$$

$$= 0.00494$$

classmate = 0.00494 < 0.10

0.99506 PAGE [ ] [ ] [ ]

{ Accept Null Hypothesis }

Que 4) What is the value of the 99 percentile?

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

Que 4 Value of 99 percentile

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

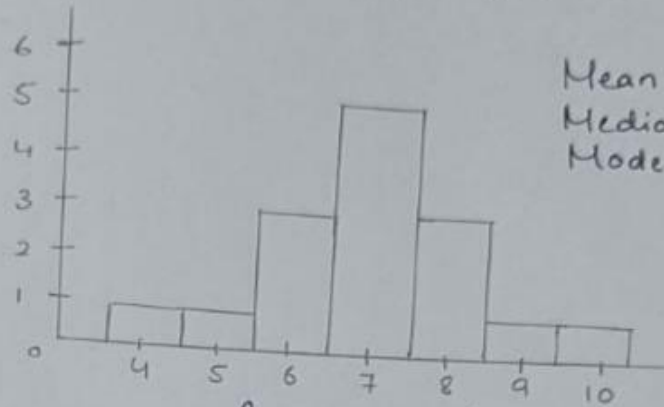
$$\text{Value} = \frac{\text{Percentile} \times (n+1)}{100}$$
$$= \frac{99}{100} \times (20+1) = 20.8 \text{ Index}$$
$$= 11.81$$

Que 5) In left & right-skewed data, what is the relationship between mean, median & mode?

Draw the graph to represent the same.

Data set : Age of children visiting park

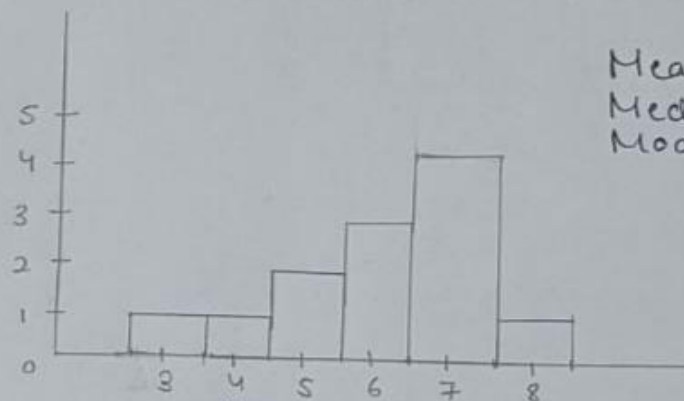
4, 5, 6, 6, 6, 7, 7, 7, 7, 7, 8, 8, 8, 9, 10



Mean 7  
Median 7  
Mode 7

Symmetrical

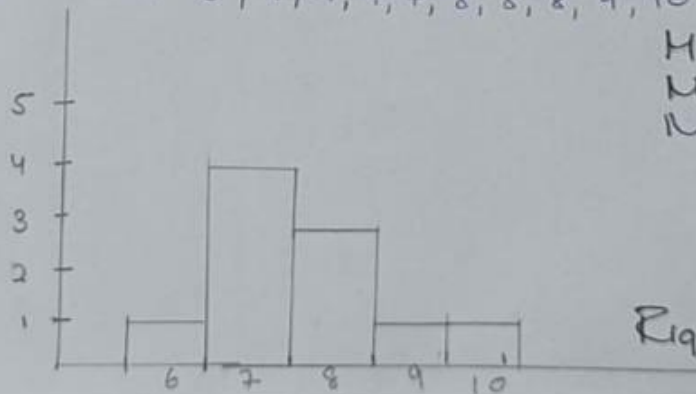
Data set : 3, 4, 5, 5, 6, 6, 6, 7, 7, 7, 7, 8



Mean 59.16  
Median 6  
Mode 7

Left skewed.

Data set : 6, 7, 7, 7, 7, 8, 8, 8, 9, 10



Mean 7.7  
Median 7.5  
Mode 7

Right skewed