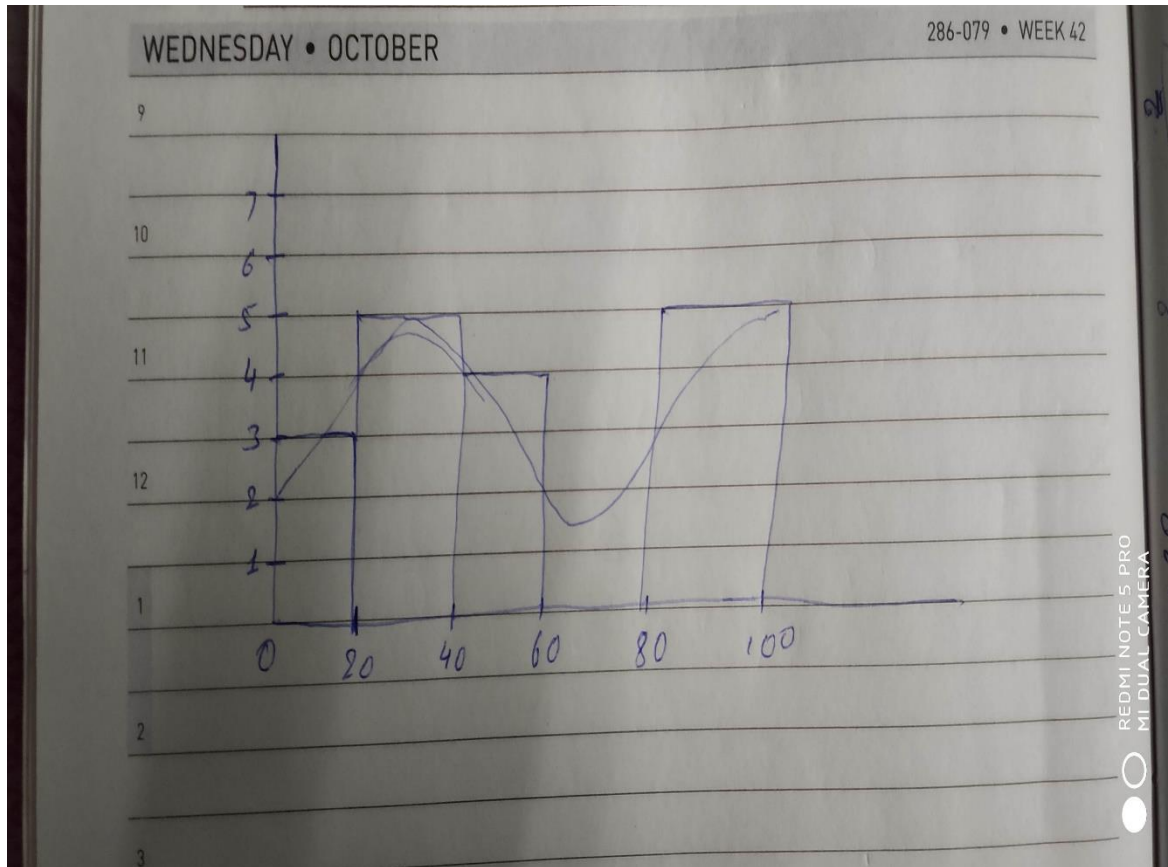
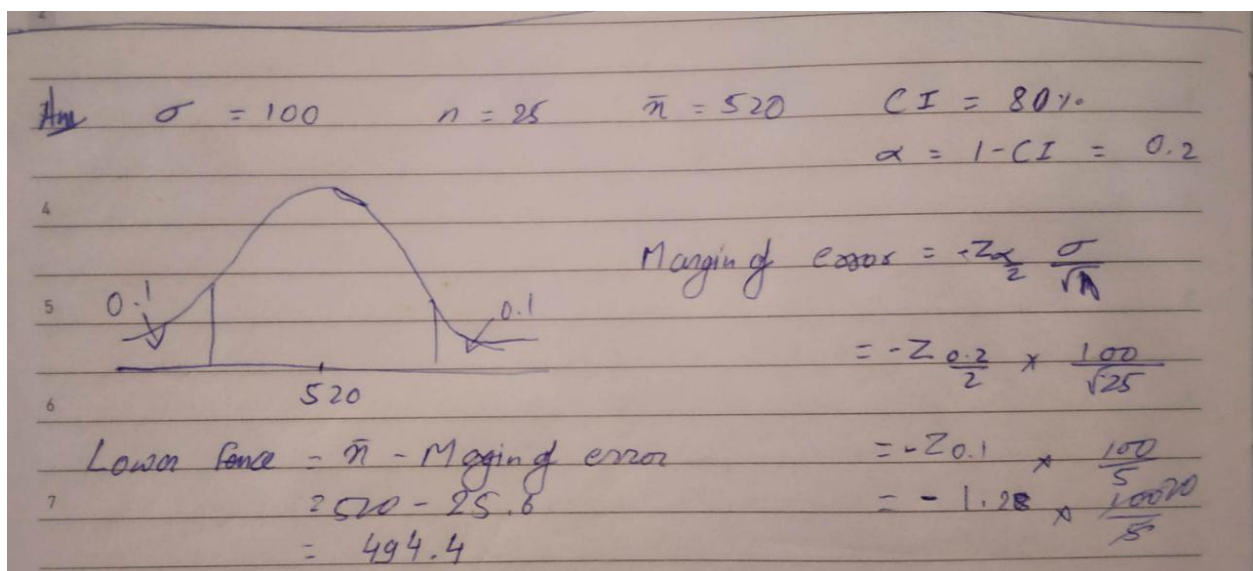


Que 1) Plot a histogram,

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.

Handwritten solution for Que 3:

28 29 30 31
284-081 • WEEK 42
REDMI NOTE 5 PRO
MI DUAL CAMERA

29 30
WEEK 42 • 285-080
OCTOBER • TUESDAY

$H_0 : p \leq 0.60$
 $H_a : p > 0.60$

$n = 250$ $\alpha = 0.10$ $CI = 0.90$ $\hat{p} = \frac{x}{n} = \frac{170}{250} = 0.68$
 $x = 170$ $p_0 = 0.60$

$Z_c = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0 q_0}{n}}} = \frac{0.68 - 0.60}{\sqrt{\frac{0.60 \cdot 0.40}{250}}} = 2.58$

$1.645 < Z_c$

At a 10% significance level, is there enough evidence to reject the idea that the vehicle ownership in city ABC is 60% or less.

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

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

Handwritten solution for Que 4:

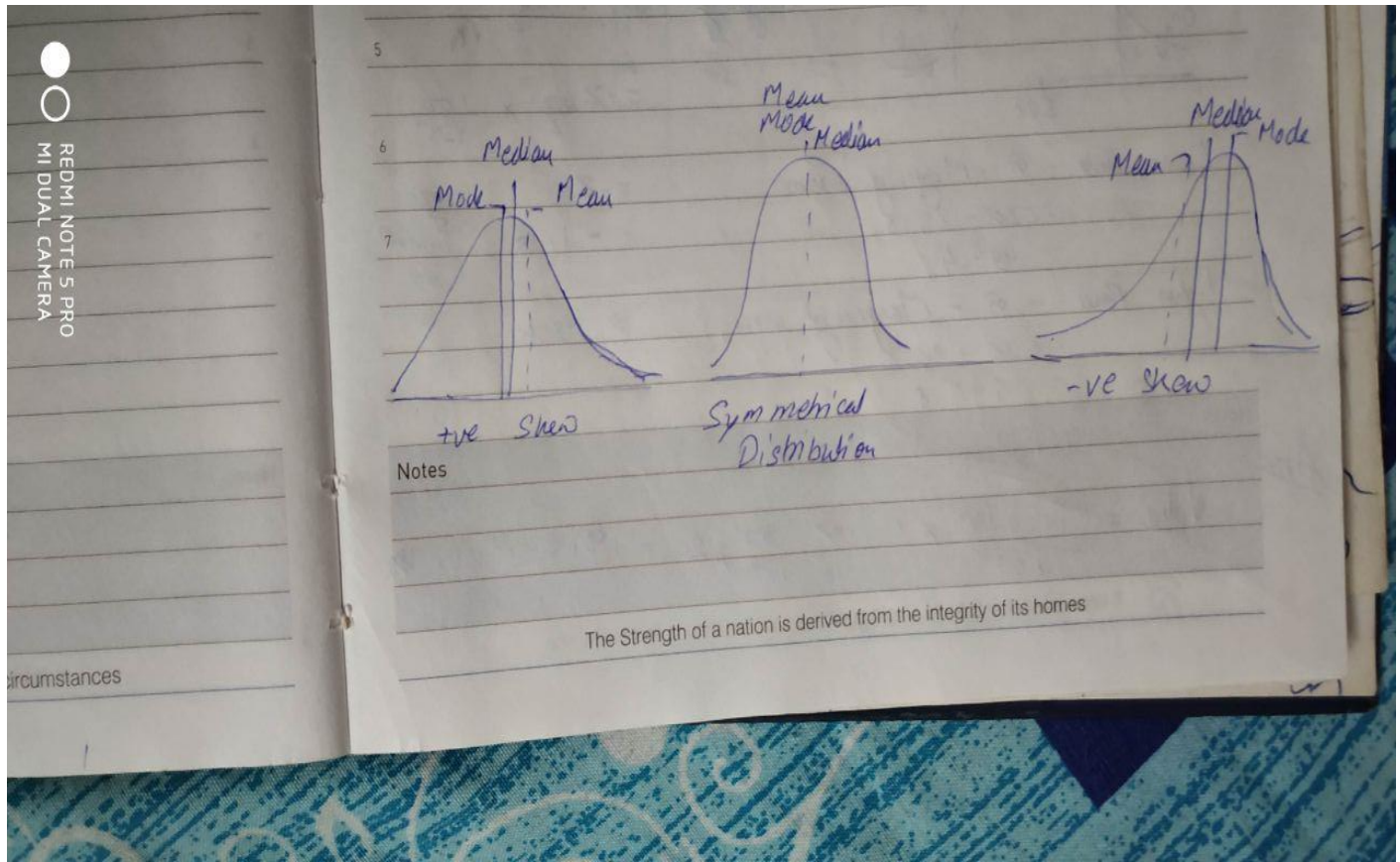
Ans

Value = $\frac{\text{Percentile} \times n}{100} \Rightarrow \frac{99}{100} \times 20 = 19.8 \approx 20^{\text{th}}$

It takes less effort to keep an old customer satisfied than to find a new one

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

Draw the graph to represent the same.



In the left skewed data **Mode>Median>Mean**.

In the right skewed data **Mean>Median>Mode**.