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.

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

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

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

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

Draw the graph to represent the same.

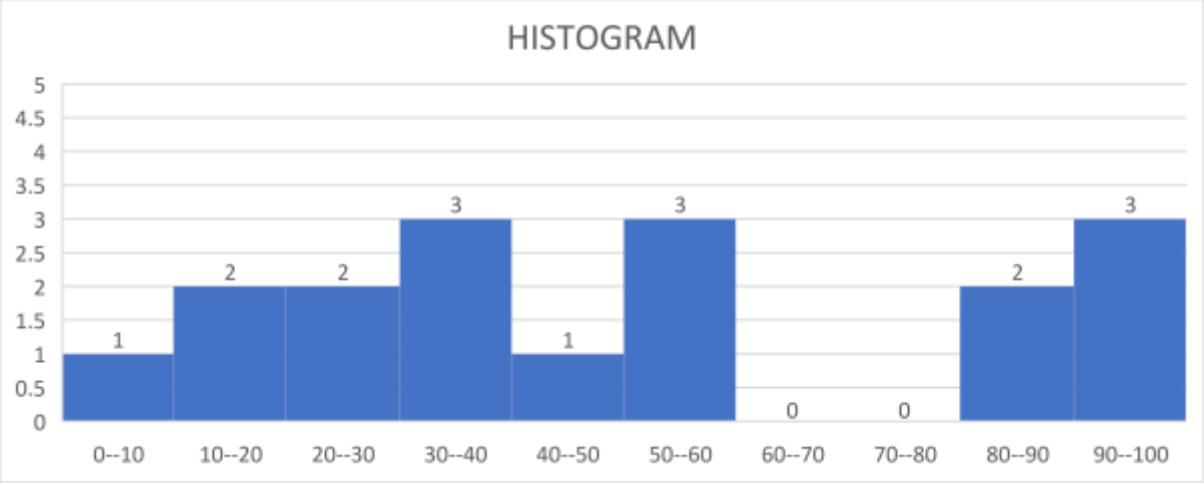
Que 1) Plot a histogram,

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

Value Range = 0-100

No of Bins(Groups)=10

Bins size = 100/10 = 10



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.

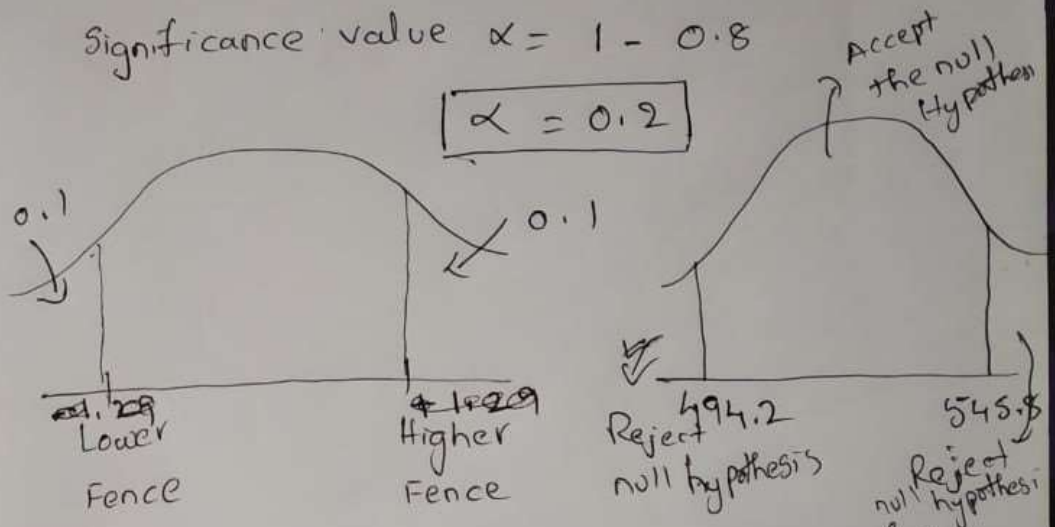
$\sigma = 100$ (Std) $\quad \bar{x} = 520$

$n = 25$ $\quad$ C.I = 80% = 0.8

$\neq 0.08$

Significance value $\alpha = 1 - 0.8$

$\boxed{\alpha = 0.2}$



Parameter = Point Estimate ± Margin of Error

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

$= z_{\frac{0.2}{2}} = \bar{x} \pm 1.29 \frac{100}{\sqrt{25}}$

$= z_{0.1}$ Lower Fence Higher Fence

$= 1.29 \Rightarrow \bar{x} - z_{\frac{\alpha}{2}} \frac{\sigma}{\sqrt{n}} \quad \Rightarrow \bar{x} + z_{\frac{\alpha}{2}} \frac{\sigma}{\sqrt{n}}$

$= 520 - 1.29 \times \frac{100}{\sqrt{25}} \quad \Rightarrow 520 + 1.29 \times \frac{100}{\sqrt{25}}$

$= 520 - 25.8 \quad \Rightarrow 520 + 25.8$

$= 494.2 \quad \Rightarrow 545.8$

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.

a. State the null & alternate hypothesis.
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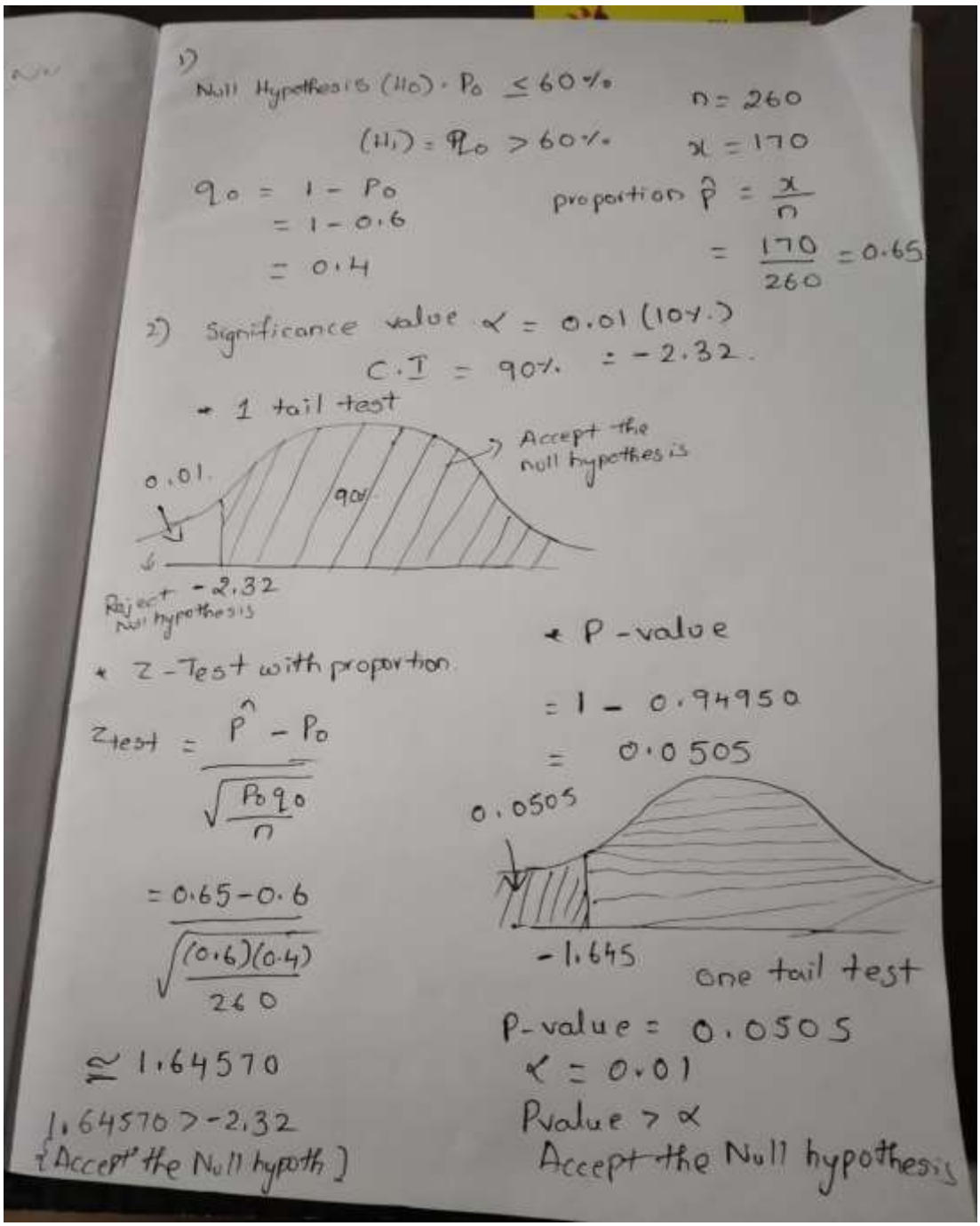

Que 4) What is the value of the 99 percentile?

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

Sol number of data values n=20

Value = percentile/100*(n+1)

= 99/100*(21)

= 20.79(index)

Value at index 20.79 is 12

Que 5) In left & right-skewed data, what is the relationship between mean, median & mode? Draw the graph to represent the same.