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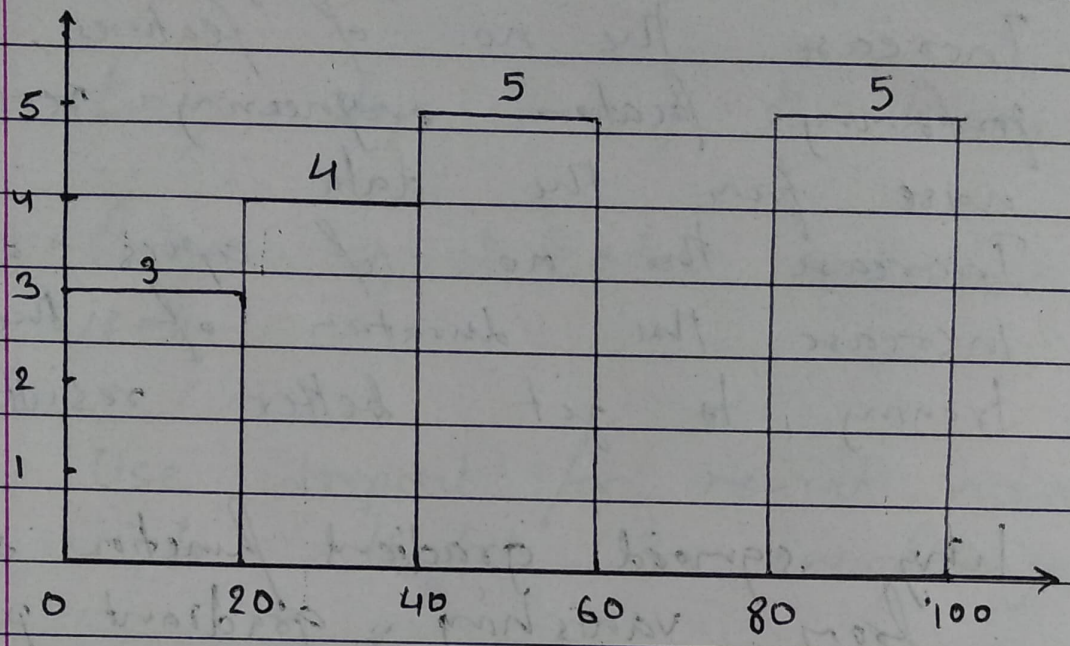
Ans 1] Histogram.



Ans 2] Given. $\mu = 100$, $n = 25$, $\bar{x} = 520$, CI = 80%.

$\alpha = 1 - CI \Rightarrow 1 - 0.80 = \underline{0.2}$

Now $Z_{\frac{\alpha}{2}} = Z_{\frac{0.2}{2}} = \underline{0.1}$

For total area $1 - 0.1 = 0.9$.

Now check in the Z table for 0.9

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the value we get is 1.29

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

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

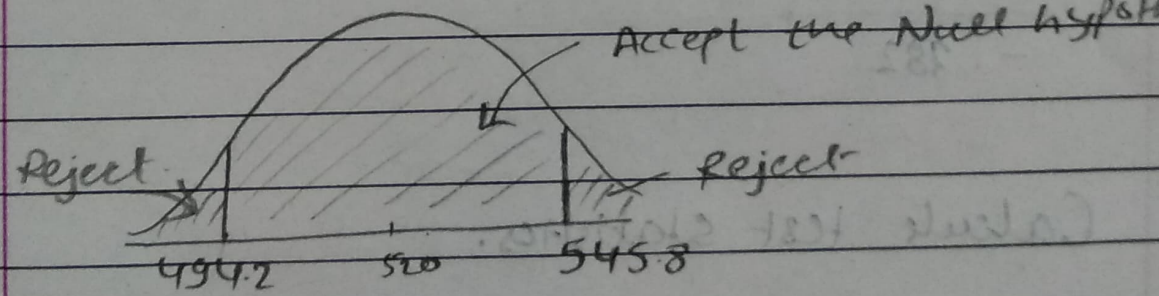
$520 - 1.29 \times 20$

Lower Fence $= 494.2$

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

$520 + 1.29 \times 20$

Higher Fence $= 545.8$



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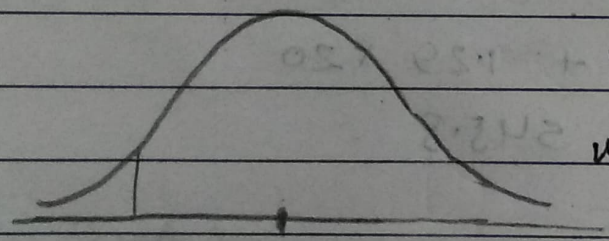
Ans 3. Given $n = 250$, $x = 170$, $\alpha = 0.10$

H_0 or P_0 = 60 % Null Hypothesis

$P_r <= 60\%$. Alternative Hypothesis.

Decision Boundary: It's one tail test on the left side because they ask for 60% or less. in question.



From the z-table we get value = -1.282

Calculate test statistics.

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

$$q_0 = 1 - P_0 = 1 - 0.60 = 0.40$$

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z test with proportion.

$$z = \frac{\hat{P} - P_0}{\sqrt{\frac{P_0 q_0}{n}}}$$

$$z = \frac{0.68 - 0.60}{\sqrt{\frac{0.60 \times 0.40}{250}}}$$

$$z = 2.58.$$

So the result is greater than the value Accept the Null Hypothise test.

Ans 4) Percentile:

$$\frac{\text{Percentile} \times n+1}{100}$$

$$\frac{99}{100} \times 20+1 \Rightarrow \frac{99}{100} \times 21 =$$

20.79 is the index value and the percentile is 12

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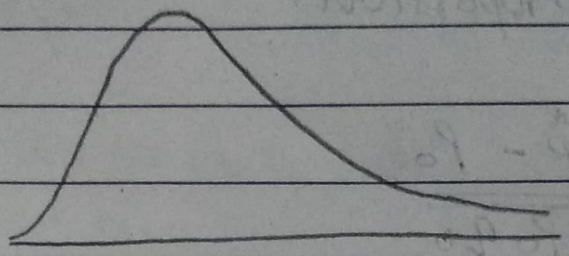
Ans 5



Right Skewed Distribution

Eg: Wealth distribution, length of comment in YT.

The relation of Mean, Median, Mode is

Mean is greater than Median and Median is greater than Mode

Mean > Median > Mode.

In left Skewed Distribution.
the eg are is Life span of Human being.

The relation of Mean, Median & Mode is

Mode > Median > Mean.