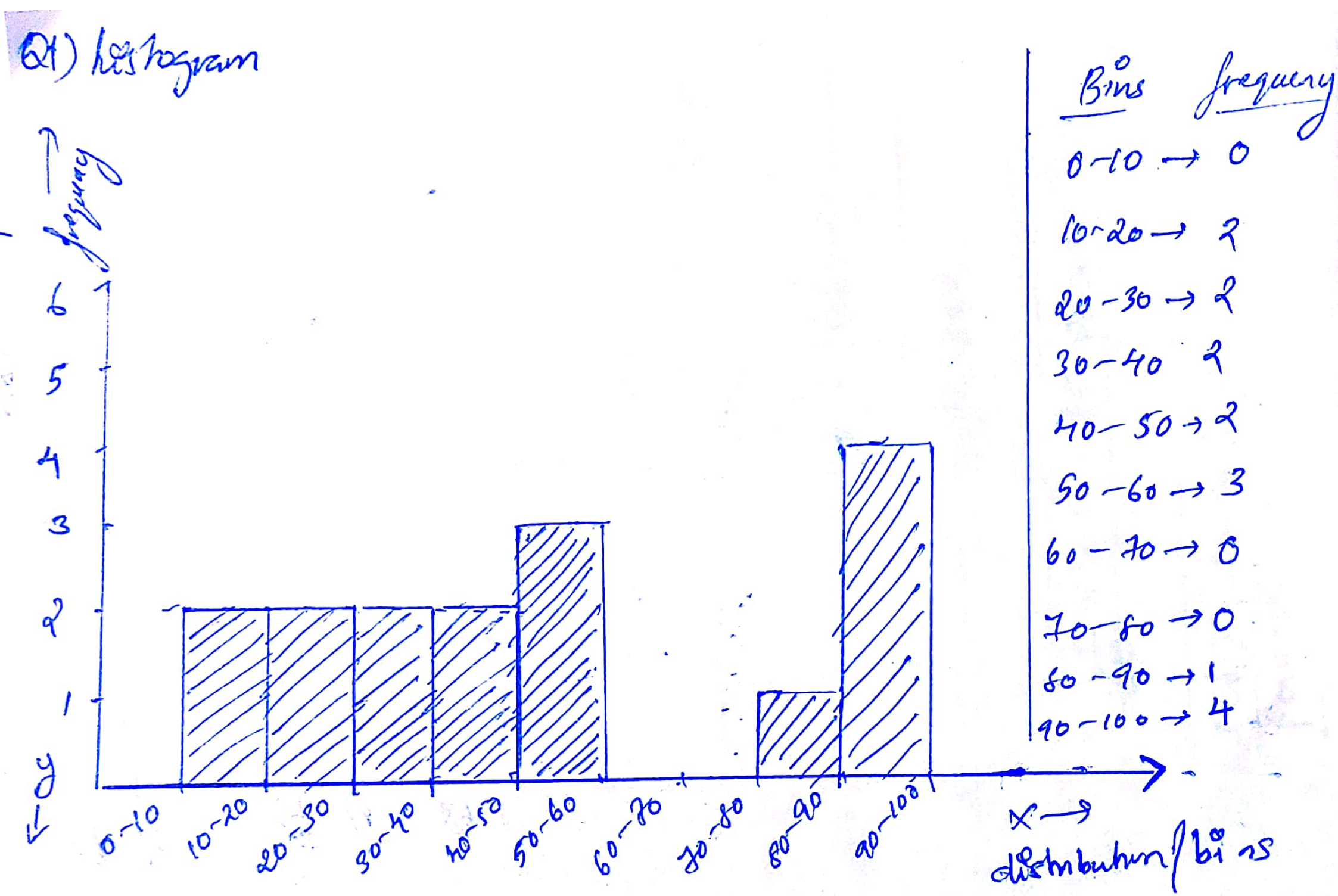
Q1) histogram



Bins	frequency
0-10	0
10-20	2
20-30	2
30-40	2
40-50	2
50-60	3
60-70	0
70-80	0
80-90	1
90-100	4

Scanned with CamScanner

Q2) S.D = 100

N = 25

Date ___/___/___

Construct 80% CI about the mean

Mean = 520.

Ans $\bar{x} = 520$

S.D = 100

$\alpha = 0.2$

> Population SD is not given ∴ Z test not applicable

> So use t test.

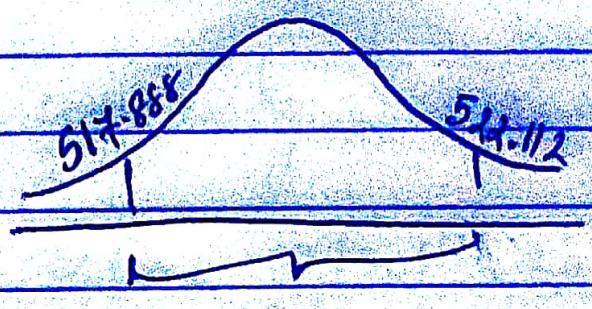
$$\bar{x} \pm t_{\alpha/2} \frac{s}{\sqrt{n}}$$

d.o.f = 25 - 1 = 24.

$t_{\frac{0.2}{2}}$ at 24 d.o.f = 1.32 table value

lower fence $= 520 - 1.32 \times \frac{8}{\sqrt{25}} = 517.888$

higher fence $= 520 + 1.32 \times \frac{8}{\sqrt{25}} = 522.112$



Scanned with CamScanner

Q3) % of owning a car $\leq 60\%$

Date $n = 250$ residents

170 residents responded 'yes'.

a) Null hypothesis $H_0 : P_0 \leq 60\%$.

Alternate Hypothesis $H_1 : P_0 \neq 60\%$.

b) population proportion $= 60\% = P_0$

$n = 250$

$x = 170$

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

Remaining part q_0, $q_0 = 1 - P_0 = 1 - 0.68 = 0.32$

$\alpha = 0.1$

Z value for $\alpha = 0.1 = 1.645$

Z test with proportion $= \frac{\hat{p} - P_0}{\sqrt{\frac{P_0 q_0}{n}}} = \frac{0.68 - 0.6}{\sqrt{\frac{0.6 \times 0.32}{250}}}$

$= \frac{0.08}{\sqrt{0.000768}}$

$= 2.888$

Calculated z value greater than 1.645

So Rejects null hypothesis

Page No.

Scanned with CamScanner

Q4) What is the value of 99 percentile?

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

99^{th} percentile $= \frac{99}{100}(20+1)$

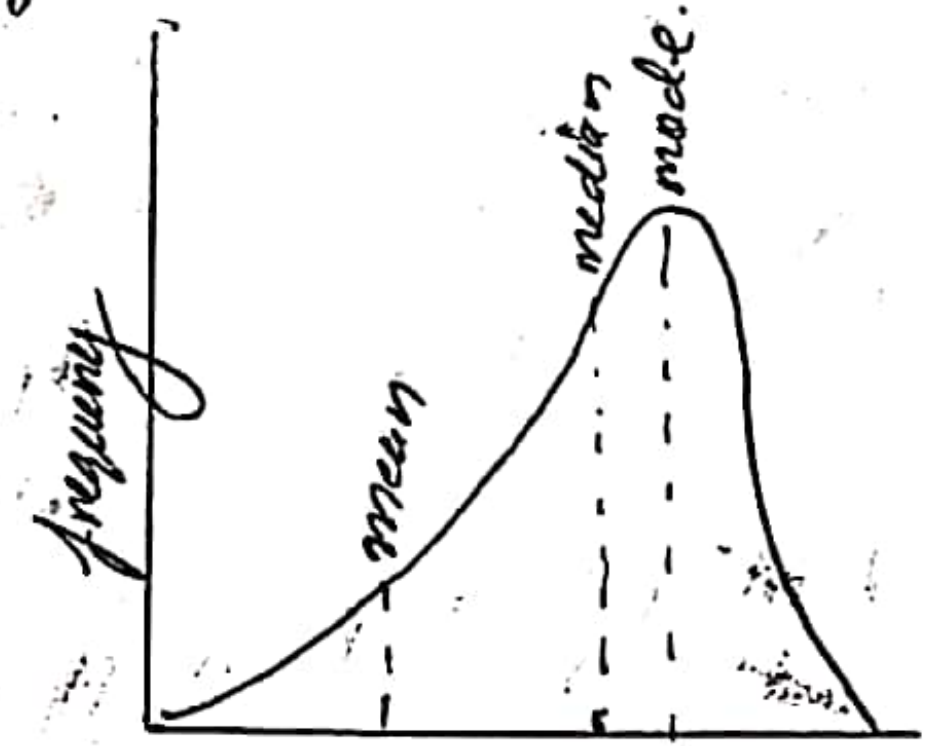
$\Rightarrow 20^{th}$ index $= 12$

99^{th} percentile $= 12$

Que 5)

Mean, Median, Mode - Left Skew Vs Right Skew

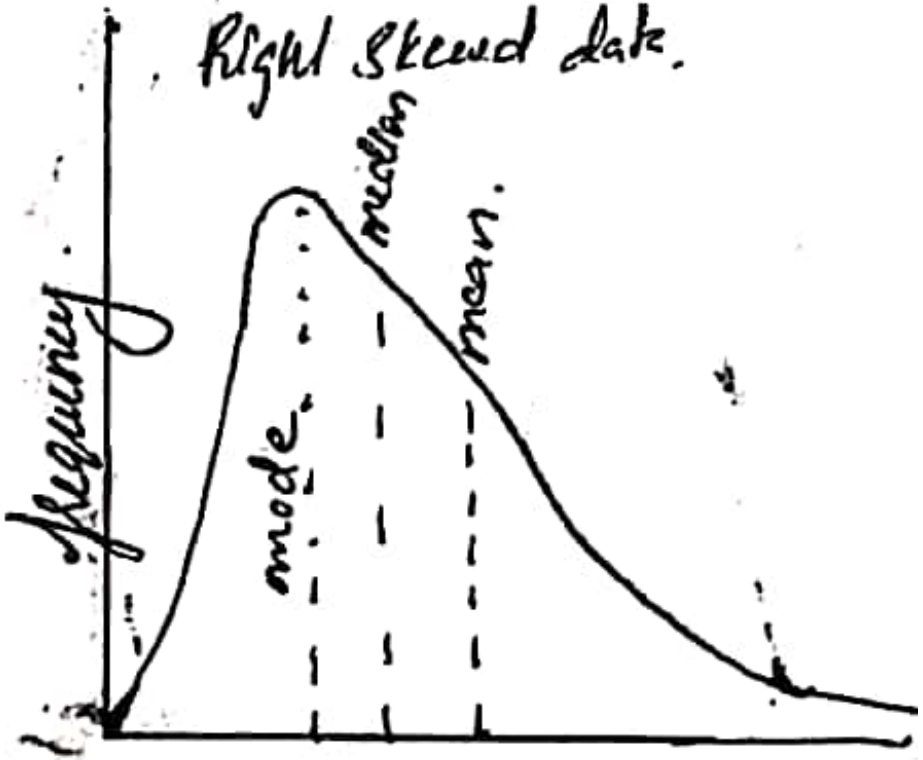
Left Skewed



mode > median > mean

Left Skew

Right Skewed data.



mean > median > mode.

Rt skewed.

Scanned with CamScanner