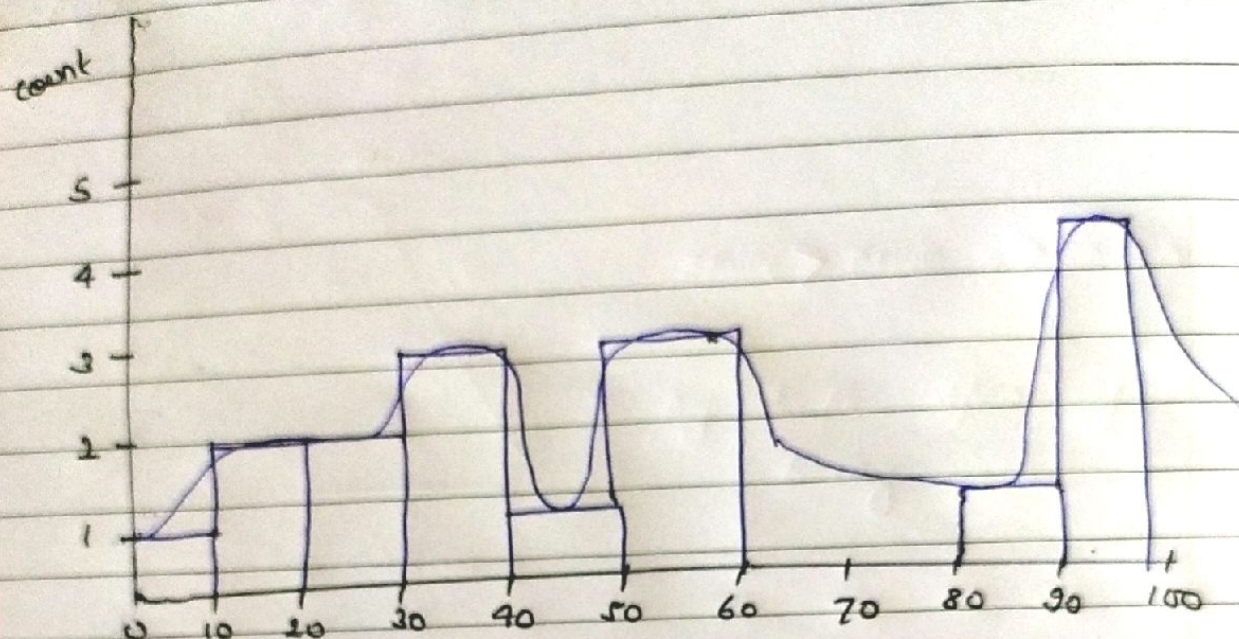


1.



Q2    $\sigma = 100$     $n = 25$     $\bar{x} = 520$     $CI = 85\%$

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

$$= 520 \pm 1.04 \times \frac{100}{\sqrt{25}}$$

$$= 520 \pm 1.04 \times \frac{100}{5}$$

$$= 520 + 20.8$$

$$= 540.8$$

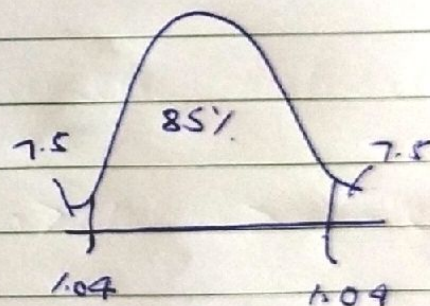
$$= 520 - 20.8$$

$$= 499.20$$

$$H_0 = 520$$

$$[499.20 - 540.8]$$

↳ to accept null hypothesis



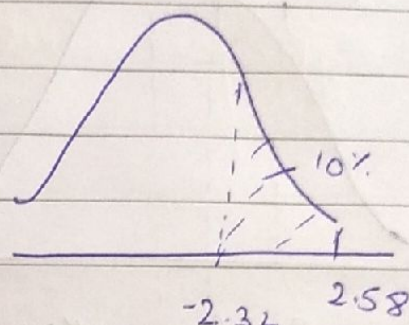


3.  $H_0: \leq 0.6 = P_0$  It is a 1 tail test and 2 tail test  
 $H_1: > 0.6$  as  $n > 30$   
 $n = 250$

$$\hat{p} = \frac{170}{250} = 0.68$$

Z score of 0.68

$$= \frac{\hat{p} - P_0}{\sqrt{\frac{P_0(1-P_0)}{n}}}$$



$$= \frac{0.68 - 0.6}{\sqrt{\frac{0.6 \times 0.4}{250}}} = \frac{0.08 \times \sqrt{250}}{\sqrt{0.24}} = \frac{1.264}{\sqrt{0.24}} = 2.58$$

$2.58 > -2.32$  which falls outside the C.I., so Reject null hypothesis and accept the sales Manager statement

4. Percentile Rank of  $x$ :  
 value =  $\frac{\text{Percentile} \times (n+1)}{100}$

$$= \frac{99 \times (20+1)}{100}$$

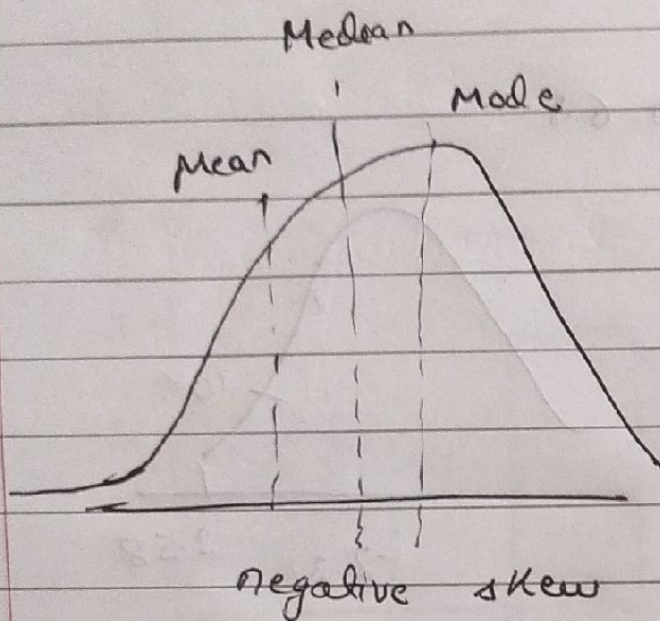
$$= \frac{99}{100} \times 21 = 20.79 \text{ index}$$

$$20.79 = \frac{11+12}{2} = \frac{23}{2} = \underline{\underline{11.5}}$$





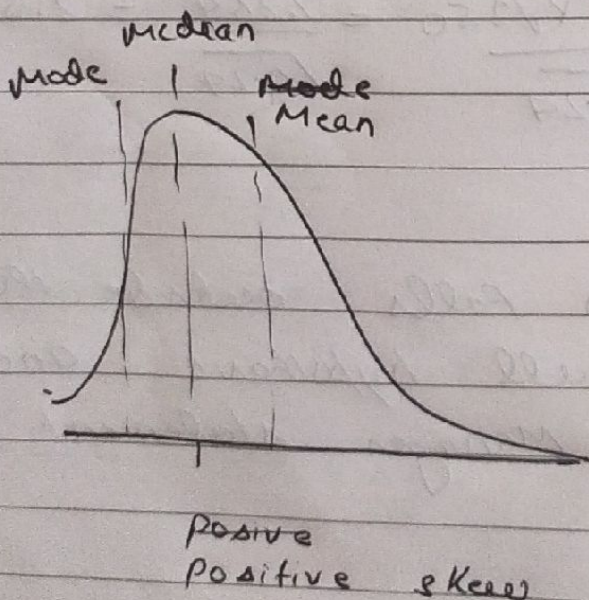
# Left skewed



$$\text{mode} > \text{Median} > \text{mean}$$

eg. Life span of human being

# Right skewed



eg wealth distribution

$$\text{Mean} > \text{Median} > \text{Mode}$$