

## ACTIVITY -04

↳

①  $X = [1, 2, 3, 4, 5, 12, 13, 76]$

②  $Y = [2, 5, 56, 23, 12, 1, 9, 50]$

③  $A = [9, 8, 6, 7, 34, 12, 12]$

④  $B = [12, 13, 16, 1, 18, 19]$

⑤  $C = [12, 78, 3, 7, 8, 5, 23]$

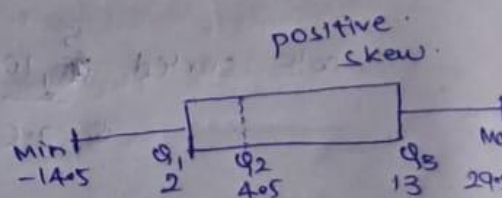
⑥  $D = [34, 6, 7, 8, 9, 90, 23]$

①  $X = [1, 2, 3, 4, 5, 12, 13, 76]$

$$Q_2 = \frac{4+5}{2} \Rightarrow 4.5$$

$$Q_1 = 2$$

$$Q_3 = 13$$



$$IQR = Q_3 - Q_1 = 13 - 2 \Rightarrow 11$$

$$\text{Minimum} = Q_1 - IQR * 1.5$$

$$\Rightarrow 2 - 16.5$$

$$\Rightarrow -14.5$$

$$\text{Maximum} = Q_3 + IQR * 1.5$$

$$\Rightarrow 13 + 11 * 1.5$$

$$\Rightarrow 29.5$$

$$\text{Range} [-14.5, 29.5]$$

Except '76' every element is in the range

76 is the outlier

②  $Y = [2, 5, 56, 23, 12, 1, 9, 50]$

$$[1, 2, 5, 9, 12, 23, 50, 56]$$

$$Q_2 = \frac{9+12}{2} \Rightarrow 10.5$$

$$Q_1 = 2$$

$$Q_3 = 50$$

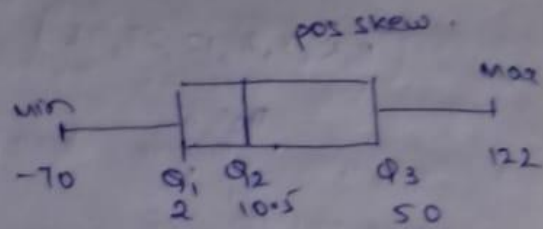
$$\begin{aligned} IQR &= Q_3 - Q_1 \\ &= 50 - 2 \\ &= 48 \end{aligned}$$

$$\begin{aligned} \text{Minimum} &= Q_1 - IQR \times 1.5 \\ &\Rightarrow 2 - 72 \\ &\Rightarrow -70 \end{aligned}$$

$$\begin{aligned} \text{Maximum} &= Q_3 + IQR \times 1.5 \\ &= 50 + 72 \\ &\Rightarrow 122 \end{aligned}$$

Range  $\rightarrow [-70, 122]$

No outliers



③  $A = [9, 8, 6, 7, 34, 12, 15]$

$[6, 7, 8, 9, 12, 15, 34]$

$Q_2 = 9$

$Q_1 = 7$

$Q_3 = 15$

$IQR = 6$

$\text{Min} = 7 - 6 \times 1.5$

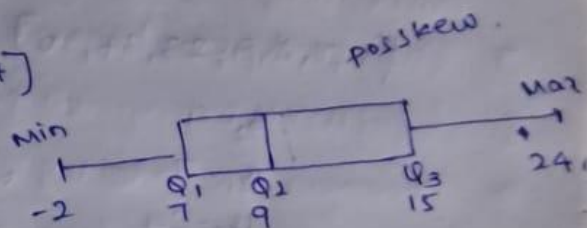
$\Rightarrow -2$

$\text{Max} = 15 + 6 \times 1.5$

$\Rightarrow 24$

Range  $= [-2, 24]$

34 is outliers



④  $B = [12, 13, 16, 1, 18, 19]$

$[1, 12, 13, 16, 18, 19]$

$Q_2 = 14.5$

$Q_1 = 6.5$

$Q_3 = 18.5$

Min

$-11.5$

$Q_1$

$Q_2$

$Q_3$

Max

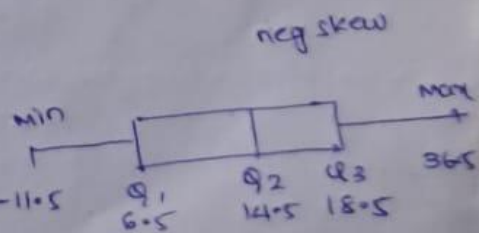
$36.5$

$IQR = 12$

$\text{Min} = 6.5 - 12 \times 1.5 \Rightarrow -11.5$

$\text{Max} = 18.5 + 12 \times 1.5 \Rightarrow 36.5$

No outliers



⑤  $C = [12, 78, 3, 7, 8, 5, 23]$

$[3, 5, 7, 8, 12, 23, 78]$

$Q_2 = 8$

$Q_1 = 5$

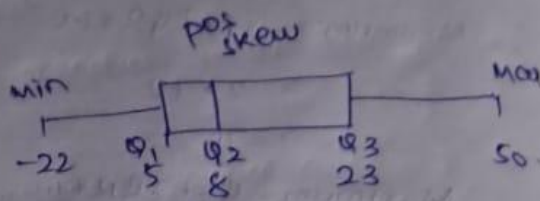
$Q_3 = 23$

$IQR = 18$

$Min = -22$

$Max = 50$

78 is outliers



⑥  $D = [34, 6, 7, 8, 9, 90, 23]$

$[6, 7, 8, 9, 23, 34, 90]$

$Q_2 = 9$

$Q_1 = 7$

$Q_3 = 34$

$IQR = 27$

$Min = 7 - 27 * 1.5$

$= -33.5$

$Max = 34 + 27 * 1.5$

$= 74.5$

