Activity-4

Y. Ramya
2203A52064
29/01/25

$X = [1, 23, 4, 5, 12, 13, 76]$

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

$A = [9, 8, 6, 7, 34, 12, 12]$

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

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

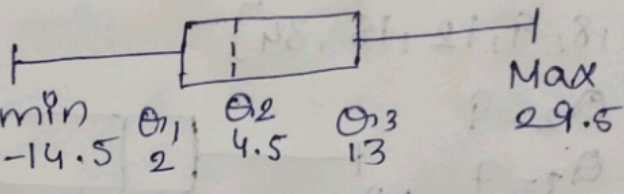
$D = [34, 6, 7, 8, 9, 90, 23]$

1) $X = [1, 2, 3, 4, 5, 12, 13, 76]$

positive skew

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

$Q_1 = 2 \quad Q_3 = 13$



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

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

$= 2 - 11 * 16.5$

$= -14.5$

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

$= 13 + 11 * 1.5$

$= 29.5$

Range $[-14.5, 29.5]$

Except '76' every element is in the range 76 is the outlier.

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

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

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

$Q_1 = 2$

$Q_3 = 50$

$IQR = Q_3 - Q_1$

$= 50 - 2$

$= 48$

Minimum $= Q_1 - IQR * 1.5$

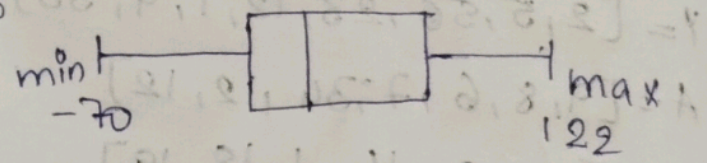
$= 2 - 72$

$= -70$

Maximum $= Q_3 + IQR * 1.5$

$= 50 + 72$

$= 122$



Range $= [-70, 122]$

No outliers

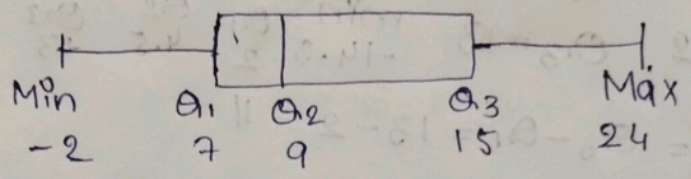
3) A = [9, 5, 6, 7, 34, 12, 15]

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

$Q_2 = 9$

$Q_1 = 7$

$Q_3 = 15$



IQR = 6

min $= 7 - 6 \times 1.5$

$= -2$

Max $= 15 + 6 \times 1.5$

$= 24$

Range [-2, 24]

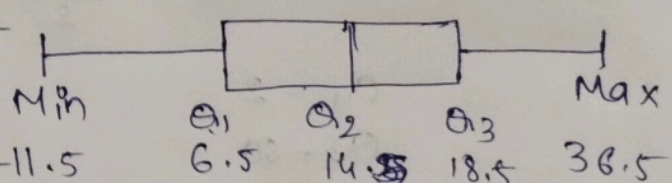
34 is outlier.

4) B = [12, 13, 16, 1, 18, 19]

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

$Q_2 = 14.5$

$Q_1 = 6.5$ $Q_3 = 18.5$



IQR = 12

Min $= 6.5 - 12 \times 1.5$

$= -11.5$

Max = 18.5 + 12 × 1.5

= 36.5

No outliers.

5) C = [12, 78, 3, 7, 8, 5, 23]

[3, 5, 7, 8, 12, 23, 75]

$Q_2 = 8$

$Q_1 = 5$

$Q_3 = 23$

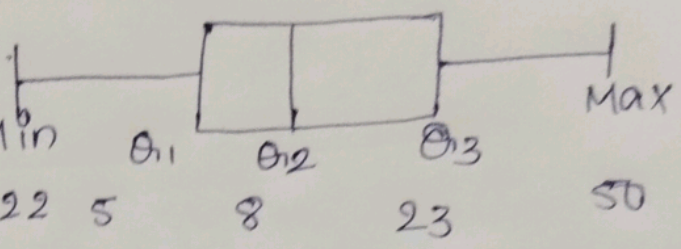
IQR = 18

Min = 5 − 18 × 1.5

= ~~18~~ − 22

Max = 23 + 18 × 1.5

= 50



78 is outlier.

6) C = [34, 6, 7, 8, 9, 90, 23]

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

$Q_2 = 9$

$Q_1 = 7$

$Q_3 = 27$

IQR = 27

Min = 7 − 27 × 1.5

= −33.5

Max = 34 + 27 × 1.5

= 74.5