Activity-4

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Batch NO: 36

- x = [1, 2, 3, 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]

Given,

x = [1, 2, 3, 4, 5, 12, 13, 76]

Sorted x column: [1, 2, 3, 4, 5, 12, 13, 76]

x = 76 median = 4.5 (Q_2)

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

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

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

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

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

median = 9

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

[1, 12, 13, 16, 18, 19] = 14.5

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

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

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

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

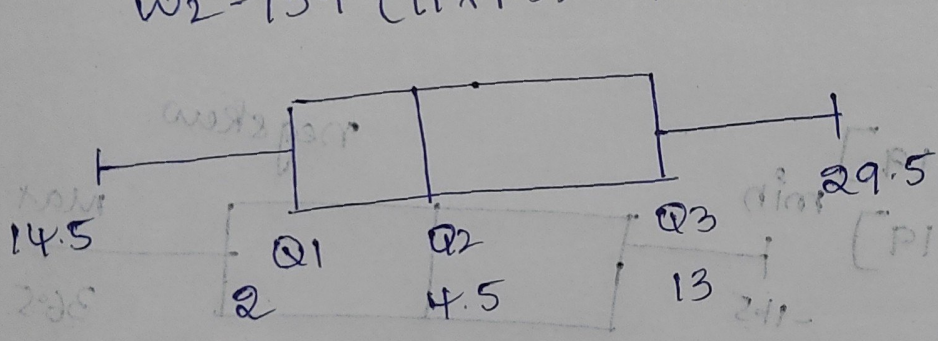
① x = Q1 = 2

Q3 = 13

IQR = 11 (Q3 − Q1)

$w_1 = 2 - (11 * 1.5) = 2.165 \Rightarrow -14.5$

$w_2 = 13 + (11 * 1.5) = 13 + 16.5 = 29.5$



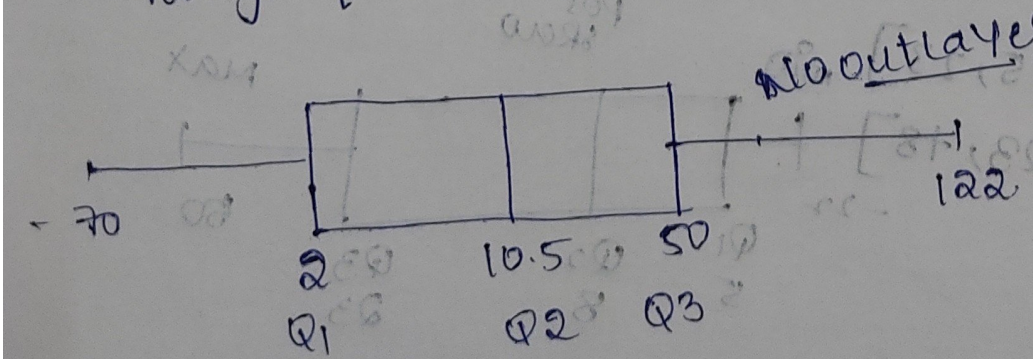
② Y = Q1 = 2, Q2 = 10.5, Q3 = 50

IQR = Q3 − Q1 = 48

$w_1 = 2 - (48 * 1.5) = -70$

$w_2 = 50 + (48 \times 1.5) = 122$.

range: [-70, 122]



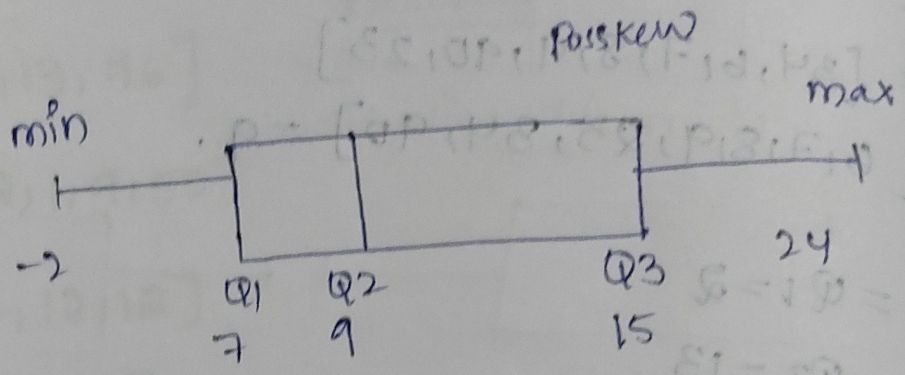
③ A = [9, 8, 6, 7, 34, 12, 15]

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

$Q_2 = 9$

$Q_1 = 7$

$Q_3 = 15$



IQR = 6

Min = 7 − 6 × 1.5

= −2

Max = 15 + 6 × 1.5

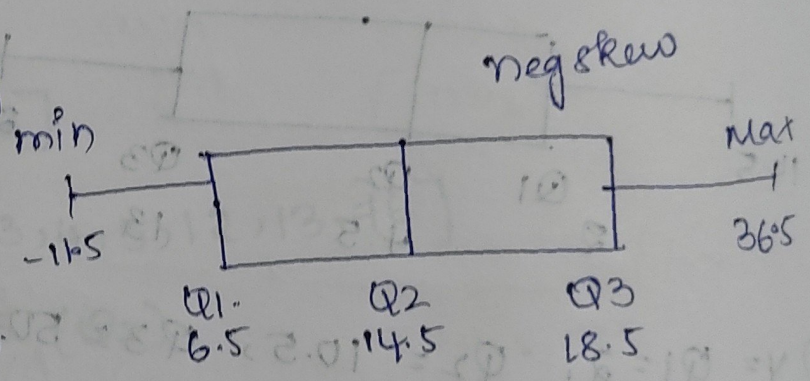
= 24

Range = [−2, 24]

→ 34 is outliers.

④ B = [12, 13, 16, 1, 18, 19]

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



$Q_2 = 14.5$

$Q_1 = 6.5$ $Q_3 = 18.5$

IQR = 12

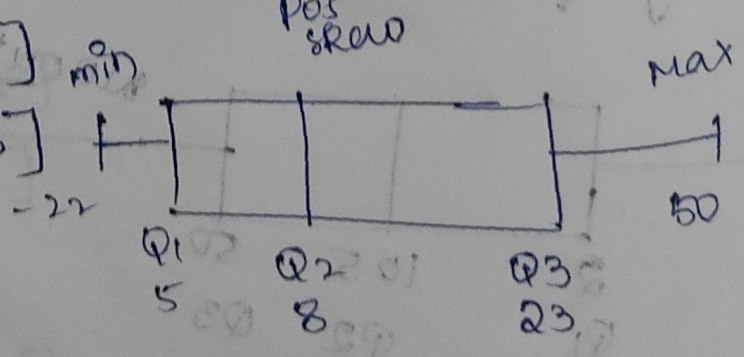
min = 6.5 − 12 × 1.5 = −11.5

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, 78]



$Q_2 = 8$

$Q_1 = 5$

$Q_3 = 23$

IQR = 18 → 78 is outliers.

min = −22

max = 50

⑥ $D = [34, 6, 7, 8, 9, 90, 23]$

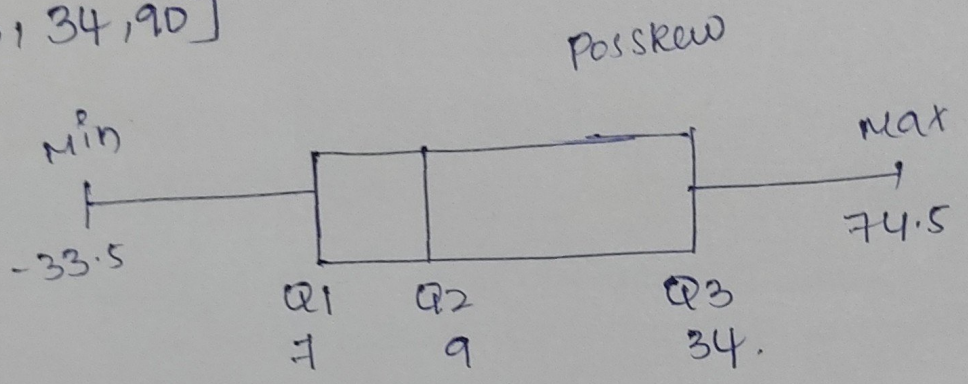
$[6, 7, 8, 9, 23, 34, 90]$

$Q2 = 9$

$Q1 = 7$

$Q3 = 34$

$IQR = 27$



$Min = 7 - 27 \times 1.5$

$= -33.5$

$Max = 34 + 27 \times 1.5$

$= 74.5$