

Given Data Points =

$\{(2,3), (4,5), (5,8), (6,6), (7,7), (8,9), (10,12), (12,14), (13,20), (20,30)\}$

Separating  $x$  and  $y$  values.

$x = \{2, 4, 5, 6, 7, 8, 10, 12, 13, 20\} \rightarrow$  sorted

$y = \{3, 5, 6, 7, 8, 9, 12, 14, 20, 30\}$

\* computing IQR for 'x'

$\rightarrow Q_1$ , (25<sup>th</sup> Percentile) = 5

$\rightarrow Q_3$ , (75<sup>th</sup> Percentile) = 12

$$IQR_x = Q_3 - Q_1 = 12 - 5 = 7$$

$$IQR_{\text{range}} \quad LB = Q_1 - 1.5 \times IQR_x$$

$$UB = Q_3 + 1.5 \times IQR_x$$

$$\rightarrow LB = 5 - (1.5 \times 7) = 5 - 10.5 = -5.5$$

$$\rightarrow UB = 12 + (1.5 \times 7) = 12 + 10.5 = 22.5$$

Since  $x=3$  lies

$$\boxed{-5.5 \leq 3 \leq 22.5} \quad \text{not an outlier}$$

1/y for y

$$IQR_y = Q_3 - Q_1 = 14 - 6 = 8$$

$$LB = Q_1 - 1.5 \times IQR_y = 6 - 1.5 \times 8 = -6$$

$$UB = Q_3 + 1.5 \times IQR_y = 14 + 1.5 \times 8 = 26$$

Since  $y=3$  also lies

$$\boxed{-6 \leq 3 \leq 26} \quad \text{not an outlier}$$

$\therefore$  the test point (3,3) is not an outlier