

5 Number Summary

- 1) Minimum
- 2) 1st Quartile (25%)
- 3) Median
- 4) 3rd Quartile (75%)
- 5) Maximum

Example {1, 2, 2, 2, ^{5th}3, 3, 4, 5, 5, 5, 6, 6, 6, 6, ^{15th}7, 8, 8, 9, 27}

[Lower fence <-----> Higher Fence]

Lower fence = $Q_1 - 1.5 (IQR)$

Higher fence = $Q_3 + 1.5 (IQR)$

(25%)

$$Q_1 = \frac{\text{Percentile}}{100} \times (n+1) = \frac{25}{100} \times (20) = 5^{\text{th}} \text{ position}$$

(75%)

$$Q_3 = \frac{75}{100} \times (20) = 15^{\text{th}} \text{ position} = 7$$

$$IQR = Q_3 - Q_1 = 7 - 3 = 4$$

$$\text{Lower fence} = Q_1 - 1.5 (IQR) = 3 - 1.5 (4) = -3$$

$$\text{Higher fence} = Q_3 + 1.5 (IQR) = 7 + 1.5 (4) = 13$$

Example {1, 2, 2, 2, 3, 3, 4, 5, 5, 6, 6, 6, 6, 7, 8, 8, 9, 27}

Minimum = 1

1st Quartile = 3

Median = 5

3rd Quartile = 7

Maximum = 9

Box plot

Remove outlier