5 Number Summary

1) Minimum ✓
2) 1st Quartile (25%)
3) Median i.e 50% or Q2
4) 3rd Quartile (75%)
5) Maximum

Eg: 1, 2, 2, 2, 3, 3, 4, 5, 5, 5, 6, 6, 6, 6, 7, 8, 8, 9, ~~27~~ ← outlier

[lower fence ⟷ and ⟷ Higher fence]

to remove outliers we need to find them

Lower fence = Q1 − 1.5(IQR)

Higher fence = Q3 + 1.5(IQR)

formula to find lower ad higher fences

IQR is inter quartile range

(25%)

$Q1 = \frac{\text{Percentile}}{100} \times (n+1) = \frac{25}{100} \times (20) = 5^{th}\ \text{position} = 3$ ✓

(75%)

$Q3 = \frac{75}{100} \times (20) = 15^{th}\ \text{position} = 7$ ✓

Outlier [−3 ⟷ 13]

IQR = Q3 − Q1 = 7 − 3 = 4 ✓

∴ Lower fence = Q1 − 1.5(IQR)

= 3 − 1.5(4)

= 3 − 6 = −3

Higher fence = Q3 + 1.5(IQR)

= 7 + 1.5(4)

= 13 //

the elements which are lower then lower fence and higher then higher fences are my outliers . thus 27 :

Eg: 1, 2, 2, 2, 3, 3, 4, 5, 5, 5, 6, 6, 6, 6, 7, 8, 8, 9, ~~27~~

Box plot ✓

Minimum = 1

1st Quartile = 3

Median = 5

3rd Quartile = 7

Maximum = 9

this is our 5 no summary.

using this we can draw: