

Descriptive Statistics and Formula Quiz Solutions

Given a data set:

7.5 8.3 4.9 2.1 13.7 25.2 10.4 4.7 4.6 5.4 2.5 3.2 9.7 8.7
4.6 5.2

Order the data set, and identify the mean, mode, five number summary, the IQR, variance, standard deviation and any outliers that may be in the data set.

ANSWER

2.1 2.5 3.2 4.6 4.6 4.7 4.9 5.2 5.4 7.5 8.3 8.7 9.7
10.4 13.7 25.2

MEAN: 7.5

MODE: 4.6

MINIMUM: 2.1

Q₁: 4.6

MEDIAN: 5.3

Q₃: 9.2

MAXIMUM: 25.2

IQR: $9.2 - 4.6 = 4.6$

VARIANCE: 32.05

STANDARD DEVIATION: 5.66

$1.5 * (\text{IQR}) = 1.5(4.6) = 6.9$

$Q_1 - 6.9 = -2.3$, so the lowest data point is NOT an outlier

$Q_3 + 6.9 = 16.1$, and $25.2 > 16.1$, therefore the last data point IS an outlier in our data set.