

1. Solution

The sample size, n , is 35. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 35 \rceil$	9	62.58
Q2	$\lceil 0.5 \times 35 \rceil$	18	63.61
Q3	$\lceil 0.75 \times 35 \rceil$	27	65.14

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 65.14 - 62.58 \\ &= 2.56 \end{aligned}$$

We determine the outlier boundaries.

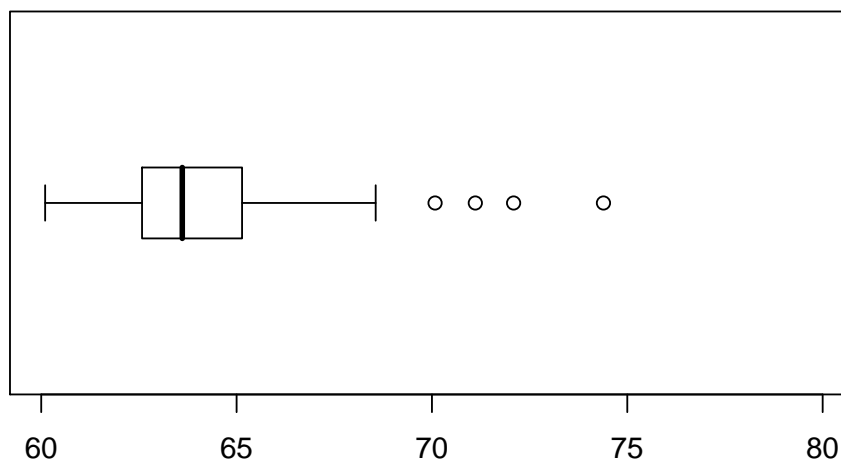
$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 62.58 - 1.5 \times 2.56 \\ &= 58.74 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 65.14 + 1.5 \times 2.56 \\ &= 68.98 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{70.08, 71.11, 72.09, 74.39\}$$

We identify the ends of the whiskers: 60.1 and 68.56. We plot the boxplot.



2. Solution

The sample size, n , is 56. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 56 \rceil$	14	67.53
Q2	$\lceil 0.5 \times 56 \rceil$	28	69.86
Q3	$\lceil 0.75 \times 56 \rceil$	42	71.43

We determine the IQR.

$$\begin{aligned}
 \text{IQR} &= Q3 - Q1 \\
 &= 71.43 - 67.53 \\
 &= 3.9
 \end{aligned}$$

We determine the outlier boundaries.

$$\begin{aligned}
 \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\
 &= 67.53 - 1.5 \times 3.9 \\
 &= 61.68
 \end{aligned}$$

$$\begin{aligned}
 \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\
 &= 71.43 + 1.5 \times 3.9 \\
 &= 77.28
 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{60.87, 77.39\}$$

We identify the ends of the whiskers: 64.43 and 76.16. We plot the boxplot.

