

1. Solution

The sample size, n , is 25. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 25 \rceil$	7	60.86
Q2	$\lceil 0.5 \times 25 \rceil$	13	61.68
Q3	$\lceil 0.75 \times 25 \rceil$	19	62.82

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 62.82 - 60.86 \\ &= 1.96 \end{aligned}$$

We determine the outlier boundaries.

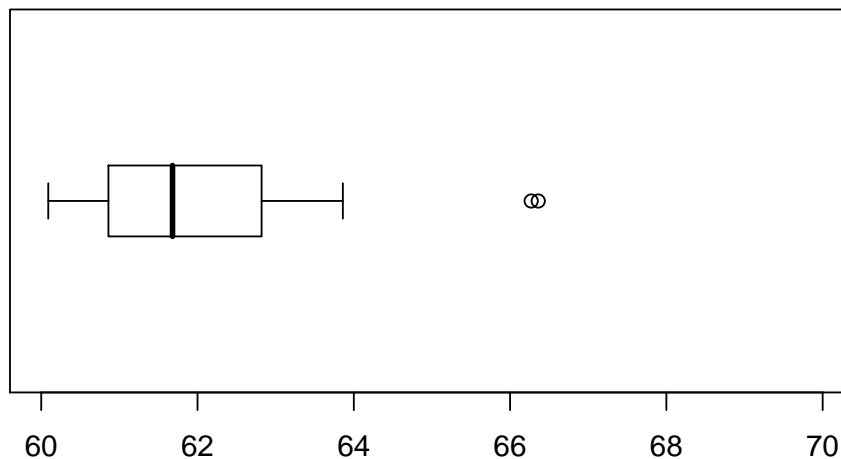
$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 60.86 - 1.5 \times 1.96 \\ &= 57.92 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 62.82 + 1.5 \times 1.96 \\ &= 65.76 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{66.27, 66.36\}$$

We identify the ends of the whiskers: 60.09 and 63.86. We plot the boxplot.



2. Solution

The sample size, n , is 40. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 40 \rceil$	10	40.32
Q2	$\lceil 0.5 \times 40 \rceil$	20	40.91
Q3	$\lceil 0.75 \times 40 \rceil$	30	41.65

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 41.65 - 40.32 \\ &= 1.33 \end{aligned}$$

We determine the outlier boundaries.

$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 40.32 - 1.5 \times 1.33 \\ &= 38.325 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 41.65 + 1.5 \times 1.33 \\ &= 43.645 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{43.87, 43.9\}$$

We identify the ends of the whiskers: 40 and 43.35. We plot the boxplot.

