

1. Solution

The sample size, n , is 24. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 24 \rceil$	6	51.45
Q2	$\lceil 0.5 \times 24 \rceil$	12	51.57
Q3	$\lceil 0.75 \times 24 \rceil$	18	51.71

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 51.71 - 51.45 \\ &= 0.26 \end{aligned}$$

We determine the outlier boundaries.

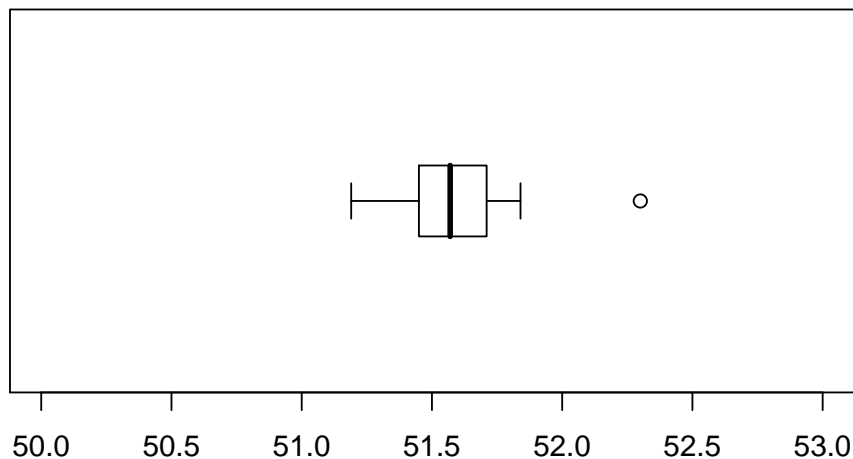
$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 51.45 - 1.5 \times 0.26 \\ &= 51.06 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 51.71 + 1.5 \times 0.26 \\ &= 52.1 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{52.3\}$$

We identify the ends of the whiskers: 51.19 and 51.84. We plot the boxplot.



2. Solution

The sample size, n , is 28. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 28 \rceil$	7	53.31
Q2	$\lceil 0.5 \times 28 \rceil$	14	56.66
Q3	$\lceil 0.75 \times 28 \rceil$	21	62.35

We determine the IQR.

$$\begin{aligned}
 \text{IQR} &= Q3 - Q1 \\
 &= 62.35 - 53.31 \\
 &= 9.04
 \end{aligned}$$

We determine the outlier boundaries.

$$\begin{aligned}
 \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\
 &= 53.31 - 1.5 \times 9.04 \\
 &= 39.75
 \end{aligned}$$

$$\begin{aligned}
 \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\
 &= 62.35 + 1.5 \times 9.04 \\
 &= 75.91
 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{76.64, 77.13\}$$

We identify the ends of the whiskers: 50.45 and 70.42. We plot the boxplot.

