

1. Solution

The sample size, n , is 36. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 36 \rceil$	9	112.43
Q2	$\lceil 0.5 \times 36 \rceil$	18	117.77
Q3	$\lceil 0.75 \times 36 \rceil$	27	123.88

We determine the IQR.

$$\begin{aligned}
 \text{IQR} &= Q3 - Q1 \\
 &= 123.88 - 112.43 \\
 &= 11.45
 \end{aligned}$$

We determine the outlier boundaries.

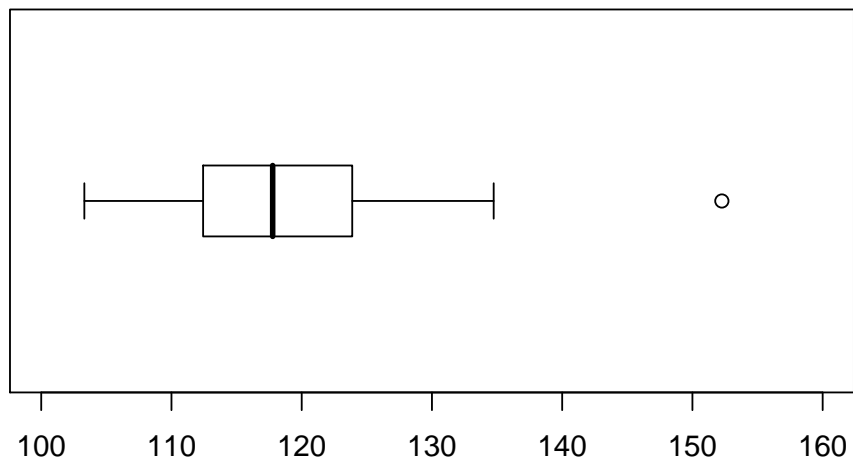
$$\begin{aligned}
 \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\
 &= 112.43 - 1.5 \times 11.45 \\
 &= 95.255
 \end{aligned}$$

$$\begin{aligned}
 \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\
 &= 123.88 + 1.5 \times 11.45 \\
 &= 141.055
 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{152.26\}$$

We identify the ends of the whiskers: 103.31 and 134.74. We plot the boxplot.



2. 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	76.61
Q2	$\lceil 0.5 \times 24 \rceil$	12	78
Q3	$\lceil 0.75 \times 24 \rceil$	18	78.98

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 78.98 - 76.61 \\ &= 2.37 \end{aligned}$$

We determine the outlier boundaries.

$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 76.61 - 1.5 \times 2.37 \\ &= 73.055 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 78.98 + 1.5 \times 2.37 \\ &= 82.535 \end{aligned}$$

We determine the outliers.

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

We identify the ends of the whiskers: 73.17 and 79.89. We plot the boxplot.

