

1. Solution

The sample size, n , is 63. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 63 \rceil$	16	32.97
Q2	$\lceil 0.5 \times 63 \rceil$	32	33.74
Q3	$\lceil 0.75 \times 63 \rceil$	48	34.43

We determine the IQR.

$$\begin{aligned}
 \text{IQR} &= Q3 - Q1 \\
 &= 34.43 - 32.97 \\
 &= 1.46
 \end{aligned}$$

We determine the outlier boundaries.

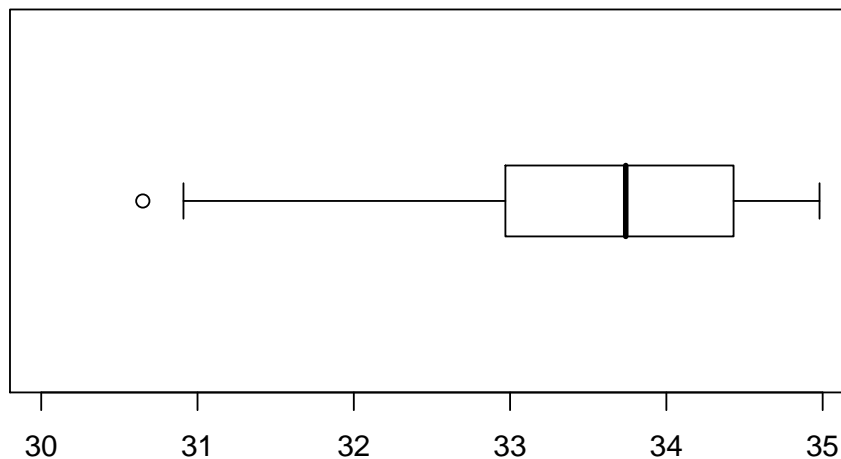
$$\begin{aligned}
 \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\
 &= 32.97 - 1.5 \times 1.46 \\
 &= 30.78
 \end{aligned}$$

$$\begin{aligned}
 \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\
 &= 34.43 + 1.5 \times 1.46 \\
 &= 36.62
 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{30.65\}$$

We identify the ends of the whiskers: 30.91 and 34.98. We plot the boxplot.



2. Solution

The sample size, n , is 72. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 72 \rceil$	18	43.15
Q2	$\lceil 0.5 \times 72 \rceil$	36	44.05
Q3	$\lceil 0.75 \times 72 \rceil$	54	44.59

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 44.59 - 43.15 \\ &= 1.44 \end{aligned}$$

We determine the outlier boundaries.

$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 43.15 - 1.5 \times 1.44 \\ &= 40.99 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 44.59 + 1.5 \times 1.44 \\ &= 46.75 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{40.64, 40.96\}$$

We identify the ends of the whiskers: 41.26 and 44.96. We plot the boxplot.

