

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	22
Q2	$\lceil 0.5 \times 63 \rceil$	32	24.21
Q3	$\lceil 0.75 \times 63 \rceil$	48	27.07

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 27.07 - 22 \\ &= 5.07 \end{aligned}$$

We determine the outlier boundaries.

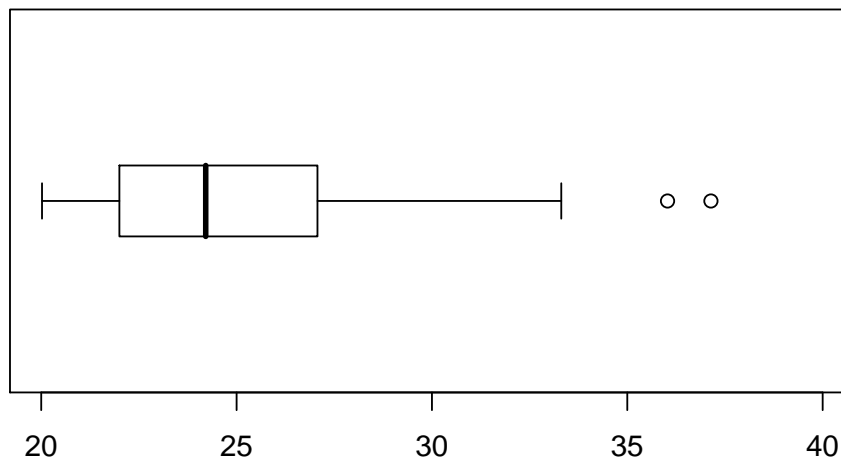
$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 22 - 1.5 \times 5.07 \\ &= 14.395 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 27.07 + 1.5 \times 5.07 \\ &= 34.675 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{36.03, 37.14\}$$

We identify the ends of the whiskers: 20.02 and 33.31. 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	21.98
Q2	$\lceil 0.5 \times 72 \rceil$	36	22.49
Q3	$\lceil 0.75 \times 72 \rceil$	54	22.69

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 22.69 - 21.98 \\ &= 0.71 \end{aligned}$$

We determine the outlier boundaries.

$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 21.98 - 1.5 \times 0.71 \\ &= 20.915 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 22.69 + 1.5 \times 0.71 \\ &= 23.755 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{20.17\}$$

We identify the ends of the whiskers: 21.03 and 23. We plot the boxplot.

