

1. 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	53.8
Q2	$\lceil 0.5 \times 28 \rceil$	14	57.25
Q3	$\lceil 0.75 \times 28 \rceil$	21	63.46

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 63.46 - 53.8 \\ &= 9.66 \end{aligned}$$

We determine the outlier boundaries.

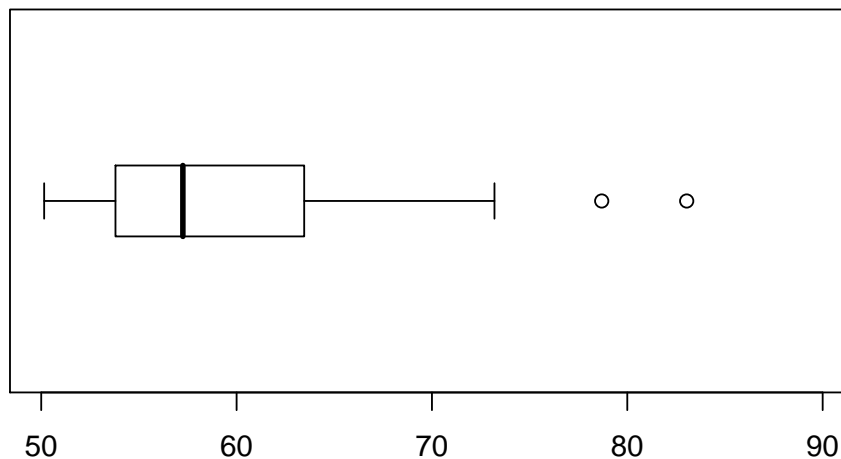
$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 53.8 - 1.5 \times 9.66 \\ &= 39.31 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 63.46 + 1.5 \times 9.66 \\ &= 77.95 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{78.69, 83.04\}$$

We identify the ends of the whiskers: 50.15 and 73.2. We plot the boxplot.



2. Solution

The sample size, n , is 56. We determine the indices and values of Q1, Q2, and Q3.

Quartile	Formula for i	i	x
Q1	$\lceil 0.25 \times 56 \rceil$	14	68.66
Q2	$\lceil 0.5 \times 56 \rceil$	28	70.24
Q3	$\lceil 0.75 \times 56 \rceil$	42	72.05

We determine the IQR.

$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 72.05 - 68.66 \\ &= 3.39 \end{aligned}$$

We determine the outlier boundaries.

$$\begin{aligned} \text{lower boundary} &= Q1 - 1.5 \times \text{IQR} \\ &= 68.66 - 1.5 \times 3.39 \\ &= 63.575 \end{aligned}$$

$$\begin{aligned} \text{upper boundary} &= Q3 + 1.5 \times \text{IQR} \\ &= 72.05 + 1.5 \times 3.39 \\ &= 77.135 \end{aligned}$$

We determine the outliers.

$$\text{outliers} = \{63.56, 77.14, 77.54\}$$

We identify the ends of the whiskers: 64.37 and 76.14. We plot the boxplot.

