## **Constructing a Boxplot**

The central box spans from Q1 to Q3. In our example, the box spans from 32 to 41.5. Note that the width of the box has no meaning.



A line in the box marks the median M, which in our case is 35.



Lines extend from the edges of the box to the smallest and largest observations that were not classified as suspected outliers (using the 1.5xIQR criterion). In our example, we have no low outliers, so the bottom line goes down to the smallest observation, which is 21. Since we have three high outliers (61,74, and 80), the top line extends only up to 49, which is the largest observation that has not been flagged as an outlier.



Outliers are marked with asterisks (\*).



To summarize: the following information is visually depicted in the boxplot:

- the five number summary (blue)
- the range and IQR (red)
- outliers (green)

