

Another Worksheet for Sections 2.4 and 2.5

1. The following stem-and-leaf plots show the distributions of highway miles per gallon ratings for cars in the sports, small, and upscale classifications:

Variable: Sports

Decimal point is 1 digit(s)
to the right of the colon.
Leaf unit = 1

2 : 3445667899
3 : 01128

Variable: Small

Decimal point is 1 digit(s)
to the right of the colon.
Leaf unit = 1

2 : 8899
3 : 011112223334444
3 : 556666

Variable: Upscale

Decimal point is 1 digit(s)
to the right of the colon.
Leaf unit = 1

2 : 44566677777888

Create a separate five-number summary for each group, and use these to create side-by-side box plots that shows a comparison between the car types.

2. Compute mean and standard deviation for each group above, and answer each question below:
- Which type of car has an interquartile range of 1.5 and a standard deviation of 1.34?
 - Which type of car has an interquartile range of 6.0 and a standard deviation of 3.91?
 - Which type of car has an interquartile range of 3.5 and a standard deviation of 2.52?

3. Here is the “study-time” data for males and females in an introductory statistics course. This is the number of hours that each student anticipates spending for statistics per week. Determine the five number summary for each group. On the same set of axes, construct a side-by-side boxplot of the study time data.

F	3.0	M	1.5	F	6.0	M	4.5
F	4.0	M	1.5	F	6.0	M	5.0
F	4.0	M	3.0	F	6.0	M	5.0
F	4.5	M	3.0	F	6.5	M	6.0
F	5.0	M	3.0	F	7.0	M	8.0
F	5.0	M	4.0	F	7.5	M	10.0
F	5.0	M	4.0	F	10.0	M	10.0
F	5.0	M	4.0	F	15.0	M	10.0
F	5.5	M	4.5	F	20.0		

4. Compute the mean and standard deviation for the male and female group separately. Are there any outliers using the $1.5 \cdot \text{IQR}$ criterion? Are there any outliers using the “3 standard deviation” criterion.