REVIEW QUESTIONS

1. Return to Table 2.1 with data from SAT scores (Exercise 3).

a. Make a stemplot of the percentage of graduates from each state who took the SAT. Use an expanded stem that shows increments of 5. (In other words, each stem value should be repeated twice.) Leave room on the left side to add a second stemplot.

b. Describe the overall shape of the distribution. Identify any gaps in the data and possible outliers. What does this tell you about the percentage of students who take the SATs from various states?

c. The percentage of students who took the SAT in each state in 1990 is given below. Transform your stemplot from (a) into a back-to-back stemplot so that the 1990 percentages can be compared to the 2010/2011 percentages. Describe the similarities and differences between the percentages for the two years.

8	42	25	6	45	28	74	58	68	44
57	52	17	16	54	5	10	10	9	60
59	72	12	14	4	12	20	10	24	67
69	12	70	55	6	22	9	49	64	62
54	5	12	42	5	62	58	44	15	11
13									

2. In determining the sizes of combat boots needed to outfit today's soldiers, the Army measures the width of soldiers' feet in addition to the length. Below are the width measurements (in millimeters) from a random sample of 40 male soldiers. Make a stemplot of these data. Expand the stem using increments of 2 (in other words, each stem value will be repeated 5 times). Based on your stemplot, what recommendations would you make to the Army about which boot widths need to be stocked and which widths are sufficiently rare that boots for that size foot should be specially ordered?

103	97	110	90	111	105	110	95	91	97
104	103	108	98	102	100	107	92	100	100
95	111	107	113	98	91	98	93	92	92
110	108	102	103	101	94	110	104	102	119

For question 3, you will need access to Stemplots from the Interactive Tools menu.

3. Samples of 20 6-year-old boys and 20 6-year-old girls were selected from children who were participating in the Infant Growth Study. One purpose of the study was to look at factors leading to childhood obesity. Table 2.2 gives the body mass index (BMI) for each of the children in the two samples.

BMI, 6-Year-Old Boys	BMI, 6-Year-Old Girls
22.8	26.9
14.0	14.7
17.5	25.2
13.2	15.8
13.5	15.1
13.7	14.4
14.4	15.8
15.5	14.2
14.5	13.4
24.5	15.3
15.4	14.0
14.8	14.4
20.6	14.7
17.6	16.3
17.3	14.9
15.7	15.9
16.0	15.9
15.5	16.5
16.3	14.1
15.7	15.5

Table 2.2. BMI for 6-year-old boys and girls.

a. Use the Stemplots tool from the Interactive Tools menu to construct back-to-back stemplots for boys' and girls' BMIs. Here's how:

- Launch Stemplots and select calculation mode.
- Enter the boys' BMIs into the box for Dataset #1.
- Click Back-to-back Datasets.
- Enter the girls' BMIs into the box for Dataset #2.
- Click Generate Stemplot.

Copy the output from the Stemplots interactive tool.

b. Describe the data on boys' BMI. Begin with a description of the overall pattern and then describe deviations from that pattern.

c. Repeat (b) for the girls' data.

d. Compare the distribution of 6-year-old girls' BMI to the distribution of 6-year-old boys' BMI.