REVIEW QUESTIONS

Recall that Table 2.1 in Unit 2 gives data on state average SAT scores and the percent of high school graduates in each state taking the SATs. Refer to Table 2.1 as needed for questions 1 and 2.

1. The state average SAT Critical Reading scores, ordered from smallest to largest, appear below.

469	469	479	479	482	485	485	487	489	493	493	493	494
495	495	499	499	509	512	513	514	515	515	517	520	523
523	539	539	542	546	548	555	563	564	568	570	571	572
575	576	580	583	584	585	586	590	592	593	596	599	

a. Determine a five-number summary of the state average SAT Critical Reading scores.

b. Does California (average score 499) fall in the top half of the states in the SAT Critical Reading score? Does it fall above the bottom quarter? Support your answer.

c. Roughly what percentage of the states have scores higher than Wyoming's 572? How many states would that be?

d. Make a basic boxplot of the states' average SAT Critical Reading scores. Which quarter of the data, the first, second, third or fourth, shows the most amount of spread?

2. The states' average SAT Math scores, ordered from smallest to largest, appear below.

457	469	487	489	490	490	493	496	499	500	501	501	501
502	502	508	509	511	513	515	516	518	521	523	525	527
529	537	539	541	541	543	545	550	559	565	568	569	570
572	573	591	591	591	593	602	604	606	608	612	617	

a. Give the five-number summary of the 51 state average SAT Math scores.

b. Make boxplots to compare the distribution of the Critical Reading and Math scores. (In order to make comparisons, the boxplots must be on the same scale and positioned so that comparisons are easily made.)

c. Write a brief description comparing the distributions. Include in your descriptions comparisons of both center and spread.

3. The stemplot video in Unit 2 included data on the fuel economy information on Toyota's 2012 vehicle line. A stemplot of the city miles per gallon (mpg) data appears below.

1	3 4
1	67799
2	0112
2	5678
3	0
3	
4	34
4	
5	1
5	

a. Make a five-number summary of the mpg data.

b. Make a basic boxplot of the mpg data.

c. Based on the stemplot, how many of the data values are potential outliers?

d. Make a modified boxplot of the mpg data. Show the calculations for the fences. Based on your plot, how many data values were identified as outliers?