SRHS Math 1 - 1 Variable Statistics Review

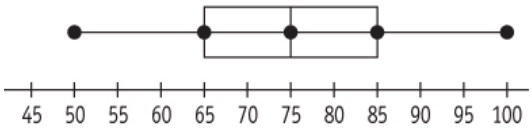
Fill in the following blanks with *ALWAYS*, *SOMETIMES*, or *NEVER.*

1. Removing an outlier from a data set will _____ decrease the standard deviation.

2. The median of a data set is _____ a value in the data set.

3. In a distribution that is skewed right, the mean is _____ greater than the median.

Circle the data sets that match the boxplot. More than one answer may be correct.



4. {50, 50, 65, 65, 66, 73, 77, 80, 80, 90, 90, 100}

5. {50, 65, 75, 75, 85, 100}

The double-stemplot below represents the number of MCs graded during a typical class.

6. Describe the shape of each distribution.

Brust		Bean
9 8 2 2 2 1	3	4
9 7 4 3	4	4 7 7
8 5 2	5	3 3 5 6 6 6
3 1	6	2 3 4 4 5 5 5 9

where 4 | 4 means 44 MCs graded

7. Who graded the most mastery checks on a single day?

8. Find the 5# summary for each teacher.

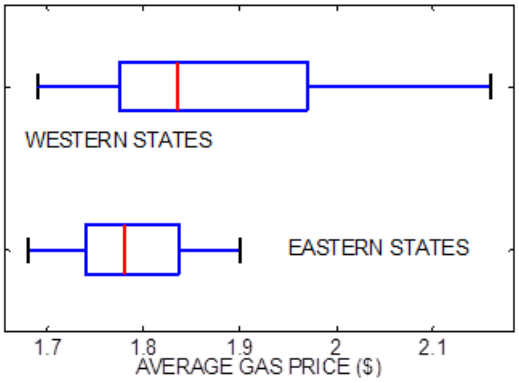
9. Use the 5# summaries to create two parallel boxplots, one for each teacher.

Brust

Bean

30 40 50 60 70

10. Use the boxplot to the right. Circle all of the ***incorrect statements***. There may be several!



a. The middle 50% of Gas prices were between about $1.74 and $ 1.83 for the Eastern States.

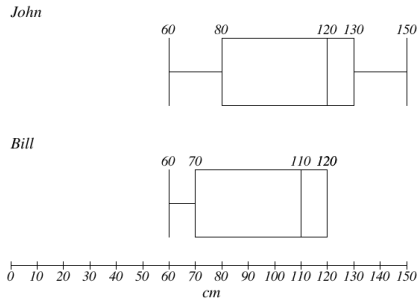
b. The distribution of Western States is skewed to the left.

c. The interquartile range for Eastern States is greater than the interquartile range for the Western States.

d. 25% of the scores from the Western States were between $1.70 and $1.78.

11. Determine whether the mean for the Eastern States is greater than or less than the median. Use a complete sentence to explain your reasoning.

12. John and Bill are high jumpers. The plots below represent the height of their last 20 jumps.



Using SOCS, compare the distributions of the heights of the two jumpers. Be sure to address all 4 parts of SOCS, if possible. (8 pts)

13. The double stemplot shows the number of points scored by each player of Chicago and Seattle's basketball teams.

Seattle Leaf	Stem	Chicago Leaf
7 4 4	0	7 9
9 8	1	0 0 2 7
3	2	2

Key: where 9 | 1 | 0 means 19 points (Seattle) and 10 points (Chicago)

a. Find the median of each team.

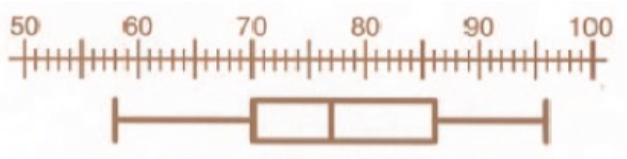
b. Find the standard deviation of points scored by each player on each team.

c. If these points represent all of the points scored, who won the game?

TASK 1: Create two dot plots with the following data. Dot Plot A: 1, 1, 1, 1, 1, 10, 10, 10, 10, 10. Dot Plot B: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Which dot plot has the greater standard deviation? Write a viable argument for your choice.

TASK 2: The box plot shows a distribution of the amount of money 200 students took on an overnight trip. The minimum amount of money is $58 and the maximum amount is $96.

a. How many students took less than$70 on the trip?



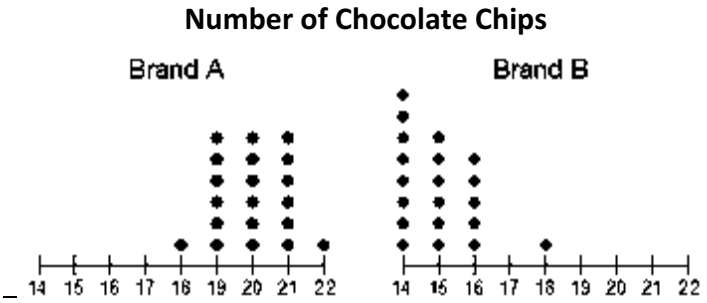
b. How many students took $77 or more on the trip?

c. How many students took more than $77 dollars but less than $86 dollars?

Fill in the following blanks with *ALWAYS*, *SOMETIMES*, or *NEVER.*

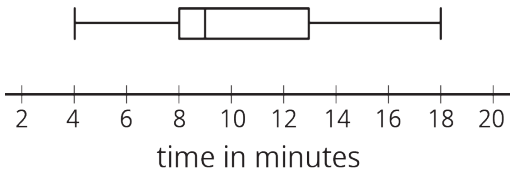
1. Adding an outlier from a data set will _____ decrease the standard deviation.
2. The mean of a data set is _____ a value in the data set.
3. In a distribution that is skewed left, the mean is _____ greater than the median.
4. A distribution that is skewed left is _____ skewed right.
5. If a distribution is skewed left, the median will _____ be greater than the mean.
6. If you add two outliers to a data set, the standard deviation will _____ change.
7. If you add a number to a data set, the median will _____ change.

8. Use the dotplots to fill in the table.



Number of Chocolate Chips		
	Brand A	Brand B
Mean		
Median		
Standard Deviation		

9. Circle the data sets that **DO NOT** match the boxplot.



a. {4, 8, 10, 12, 13, 17, 19}

b. {4, 7, 9, 9, 11, 11, 14, 18}

c. {4, 8, 9, 9, 13, 18}

d. {4, 4, 8, 8, 10, 12, 14, 18}

e. {4, 8, 8, 9, 12, 13, 18}

10. Students were asked how many books they read last summer. The following list tells how the students responded:

{ 4, 4, 5, 3, 2, 1, 2, 1, 2, 1, 0, 0, 7, 0, 1, 1, 1, 9, 8, 0}

a. Make a dotplot to represent the data:

b. Find the 5 number summary of the data:

Min_____ 1st Quartile_____ _Median _____ 3rd Quartile _____ Max _____

c. Find the range and standard deviation of the data. Range _____ Standard deviation _____

The double-stemplot below represents the number of butterflies caught by each teacher for each day of the butterflyfest.

11. Describe the shape of each distribution.

12. Who graded the most butterflies on a single day?

Brust		Bean
1	3	4 9
9 7 4 3	4	0 4 7 7 8
8 8 8 5 2	5	0 0 3 3 5 6 6
8 7 4 4 3 1 0	6	2 3 3

where 4 | 4 means 44 MCs graded

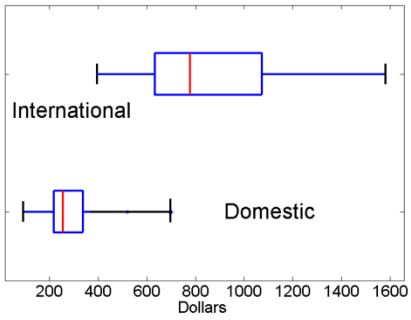
13. Find the 5# summary for each teacher.

14. Use the 5# summaries to create two parallel boxplots, one for each teacher.

Brust

Bean

15. The boxplot to the right shows the monthly payments required to purchase a brand new car of two types: international domestic. Using the boxplots to the right, circle all of the ***incorrect statements***. There may be several!



a. The middle 50% of payments for International cars was between $400 and $600.

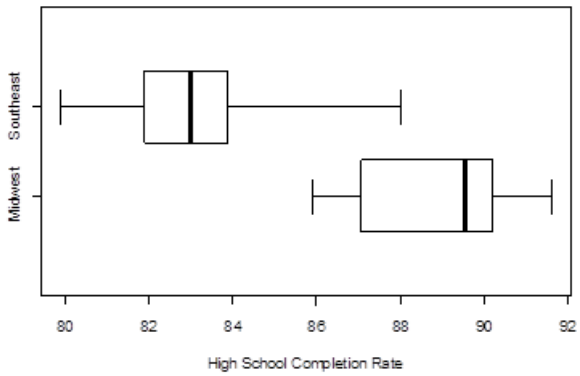
b. The distribution of Domestic car payments is skewed to the right.

c. The interquartile range for Domestic is greater than the interquartile range for the International car payments.

d. 25% of the payments for the International cars were between $800 and $1600

16.. Determine whether the maximum value for the Domestic car payments is greater than or less than the median for International car payments.

17. The following boxplots represent the graduation rates in two different regions of the United States.



Using SOCS, compare the distributions of graduations rates for the Southeast and Midwest. Be sure to address all 4 parts of SOCS, if possible.