Assignment 3.3—part 2 p.106-110 #2, 4, 6, 31, 36

2. Determine if the following statements are true or false:

____ a. If each of 25 sample values is equal to 20 min., the standard deviation of the sample is 0 min.

____ b. For any set of sample values, the standard deviation can never be a negative value.

____ c. If the standard deviation of a sample is 3 kg, then the variance is 9 kg.

____ d. If the variance of a sample is 16 sec^2, then the standard deviation is 4 sec.

____ e. If the standard deviation of a sample is 25 cm, then the variance is 5 cm^2.

4. Identify the symbols used for each of the following:

a. sample standard deviation ____

b. population standard deviation ____

c. sample variance ____

d. population variance ____

6. Listed below are the annual tuition amounts of the 10 most expensive colleges in the United States for a recent year. The colleges listed in order are: Sarah Lawrence, NYU, George Washington, Bates, Skidmore, Johns Hopkins, Georgetown, Connecticut College, Harvey Mudd, and Vassar.

$54,410	$51,991	$51,730	$51,300	$51,196
$51,190	$51,122	$51,115	$51,037	$50,875

Find the range, variance, and standard deviation for the given sample data.

range =

variance =

standard deviation =

Can this "Top 10" list tell us anything about the standard deviation of the population of all U.S. college tuitions?

31. (Use the data from question 27) The following data set includes the numbers of years that U.S. presidents have lived after their first inauguration (data set 12 in appendix B).

10	29	26	28	15	23	17	25	0	4	1
16	12	4	17	16	0	24	12	4	18	21
11	2	9	36	12	28	16	3	9	25	23

Find the range

Use the range rule of thumb to estimate the value of the standard deviation.

Find the actual standard deviation of the population.

Compare the estimate and the actual standard deviation.

36. Based on Data Set 19 in Appendix B, cans of regular Pepsi have weights with a mean of 0.82410 lb and a standard deviation of 0.00570 lb. Is it unusual for a can to contain 0.8133 lb. of Pepsi? Explain.