**Lab for Section 13.5** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Use good notation and show appropriate work. State your solutions to problems in complete sentences.*

1. Let *A* = {2, 5, 8, 9}, *B* = {7, 10, 13, 14} and *C* = {6, 15, 24, 27}. Note: Each element of *B* is 5 greater than the corresponding value in *A* and each element of *C* is 3 times the corresponding element in *A*.

 (a) Calculate the range, mean, and standard deviation for each of the above sets.

 (b) Compare the results for data sets *B* and *C* to the results associated with data set *A*. Use your visual

 comparisons to suggest answers to the following questions. Write complete sentences.

 (i) Suppose a constant is added to each element of a data set in order to form a new data set.

 What effect does addition of a constant to each term have on the range? mean? standard

 deviation?

 (ii) Suppose each member of a data set is multiplied by a positive constant to form a new data set.

 Describe the effect on the range, on the mean, and on the standard deviation.

2. Calculate the mean and standard deviation for the following grouped data.
First complete the table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *x* | *Frequency n* | *nx* |   |   |  |
| 1 | 2 |  |  |  |  |
| 3 | 3 |  |  |  |  |
| 4 | 10 |  |  |  |  |
| 5 | 4 |  |  |  |  |
| 9 | 1 |  |  |  |  |
|  |  |  |  |  |  |

3. Calculate the mean and standard deviation for the following data.

 2, 3, 5, 3, 6, 10, 3, 5, 4, 3, 3, 5, 4, 3, 4, 3, 5, 4, 2, 3, 3, 6, 3, 5, 3, 4