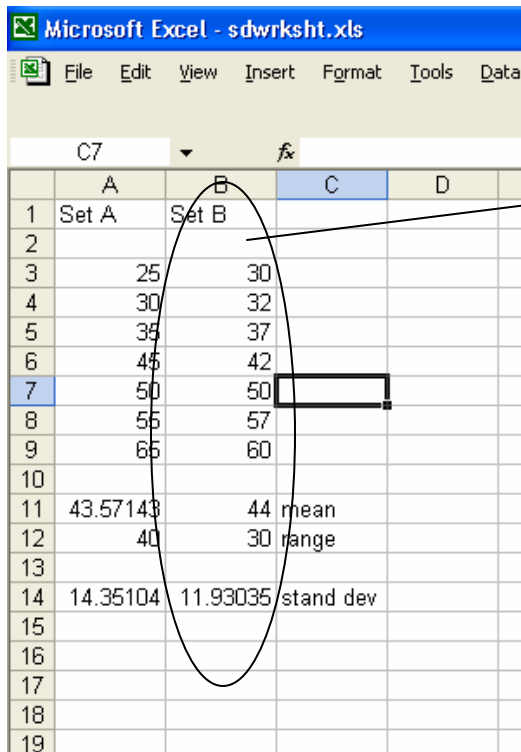**Range versus Standard Deviation Worksheet**   NAMES:

This worksheet is designed to look at the notion that a set of numbers with a larger range (maximum value minus minimum value) automatically has a higher standard deviation than a set with a smaller range. We will use Excel to investigate this by making up two sets of numbers, one with a larger range, and looking at their standard deviations.

Try to make up two sets A and B such that Set A has a larger range (maximum value minus minimum value) but Set B has a higher standard deviation.

Remember standard deviation tells us the average distance each number is from the mean.

Use the provided Excel worksheet which has dummy (you will replace these with your own) values for two sets A and B. Notice there are seven numbers in each set. Do not change the number of values in the sets. The standard deviation, range, and mean of each set are given below each set. Using the Excel worksheet as given will allow you to simply replace the values for the two sets. It will automatically calculate the ranges, means, and standard deviations.

Set B consists of the numbers 30, 32, 37, 42, 50, 57, and 60. Their mean is 44 and their range is 30. Their standard deviation is 11.93.

Replace the numbers in Sets A and B so that Set A has a larger range but Set B has a higher standard deviation.

Complete the table with your amended sets.

	Set A	Set B
Mean		
Range		
Standard deviation		

Discuss what you did to achieve this. A more obvious example (where the ranges and standard deviations are very different) will be easier to explain.