Name	Date_

2.4 CALCULATING STANDARD DEVIATION

The standard deviation is used to tell how far on average any data point is from the mean. The smaller the standard deviation, the closer the scores are on average to the mean. When the standard deviation is large, the scores are more widely spread out on average from the mean.

The **standard deviation** is calculated to find the **average distance from the mean.**

Practice Problem #1: Calculate the standard deviation of the following test data by hand. Use the chart below to record the steps.

Test Scores: 22, 99, 102, 33, 57, 75, 100, 81, 62, 29

Mean:	n:

Test Score (x)	Difference from the mean $(x - \overline{x})$	(Difference from the mean) ² $(x - \overline{x})^2$
	Sum of (Difference from the mean) $\frac{1}{2}$ $\sum (x - \overline{x})$	

Sum of (Difference from the Mean) 2 divided by degrees of freedom (n-1): \longrightarrow This is called variance.

$$\frac{\sum (x - \bar{x})^2}{(n-1)} =$$

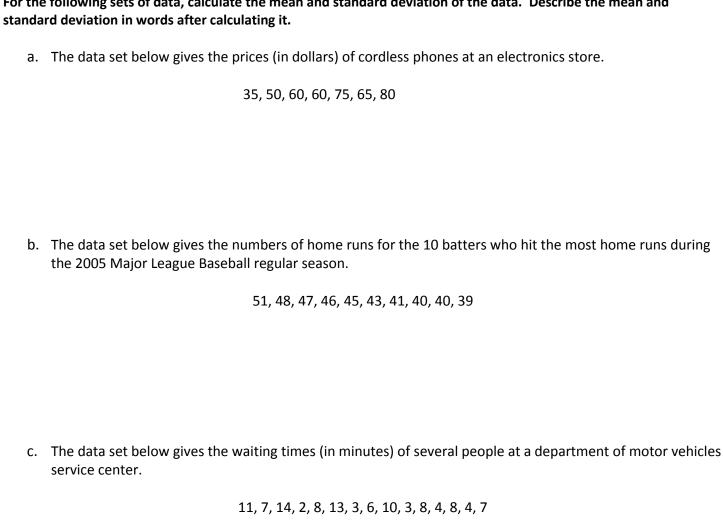
Final Step:

Standard deviation = square root of what you just calculated (variance).

Standard deviation =
$$\sqrt{\frac{\sum (x-\overline{x})^2}{(n-1)}}$$
 = ______.

PRACTICE PROBLEM #2:

For the following sets of data, calculate the mean and standard deviation of the data. Describe the mean and



d. The data set below gives the calories in a 1-ounce serving of several breakfast cereals.

135, 115, 120, 110, 110, 100, 105, 110, 125