# Standard Deviation Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#

1. **Standard Deviation**

**A statistic that tells us:**

* How far from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a certain piece of data is.
* How \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the data items are in our data set.

The mathematic symbol for standard deviation is the **lower case** Greek letter \_\_\_\_\_\_\_\_\_\_\_\_\_ and it looks like this:

1. **Calculating** **Standard Deviation**

Data Set = {600, 470, 170, 430, 300}

**Step 1:** Calculate the \_\_\_\_\_\_\_\_\_\_\_\_ .

  = \_\_\_\_\_\_\_\_\_\_\_\_\_ mm.

**Step 2:** Calculate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the mean for each element (xi) in the data set.

**Step 3:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_ each difference from Step 2.

 Step 2 Step 3

600 -  

 470 -  

170 -  

430 -  

300 -  

**Step 4:** Find the mean  (average) of the numbers in Step 3.

 We call this number the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is represented by the math symbol σ2

**Step 5:** The standard deviation is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the variance.  = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **What’s the point?**

Standard deviation gives us a “standard” way of knowing what is \_\_\_\_\_\_\_\_\_\_\_\_\_\_. We can use it to decide which dogs are extra large or extra small.

**Z-score** – indicates \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ standard deviations a certain data element is from the mean. The formula is:

* It is also called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* If a data element has a z-score of 3, what does that mean?

Now you try it…

 Ex. 1 Team A Quiz Scores = {72, 76, 80, 80, 81, 83, 84, 85, 85, 89}

 Find the

Mean = \_\_\_\_\_\_\_\_\_\_\_\_

Variance = \_\_\_\_\_\_\_\_\_\_\_

 Standard deviation = \_\_\_\_\_\_\_\_\_\_\_\_

 z-score for the quiz score “89”. = \_\_\_\_\_\_\_\_

Ex. 2 Team B Quiz Scores = {57, 63, 65, 71, 83, 93, 94, 95, 96, 98}

 Find the

Mean = \_\_\_\_\_\_\_\_\_\_\_\_

Variance = \_\_\_\_\_\_\_\_\_\_\_

 Standard deviation = \_\_\_\_\_\_\_\_\_\_\_\_

 z-score for the quiz score “57”. = \_\_\_\_\_\_\_\_