Calculating Mean and Standard Deviation – Ti-89

(You can use the Ti-89 to calculate the mean and standard deviation of either lists or matrices. You'll be learning about matrices later in Math 185, so I'll just show you how to do them for lists.)

Where do I find the "`mean(`" and "`stdDev(`" functions?

Two ways: you can hit the black button "CATALOG" and then scroll through all of the available functions (it's a bit faster if you hit the key that corresponds to the first letter of the function you want – in this instance you can hit the "3" key that has the purple "S" behind it to get to the functions starting with "s").

The other way is to go through the menus. If you look at the number 5 key, it has a yellow "MATH" above it. So, if you hit (2nd)MATH, then on the menu you hit 6 for Statistics (or just scroll down), you get a set of statistics functions. The fourth is "`mean(`" and the sixth is "`stdDev(`". Scroll down to the one you want and hit ENTER.

What does it look like on the screen?

Suppose you wish to find the standard deviation of the following list of numbers: {2, 2, 3, 4, 4, 5}. To make the Ti-89 calculate this for you, what you need to see on the screen is

$$stdDev(\{2,2,3,4,4,5\})$$

and then you'll hit enter, to get either $\dfrac{\sqrt{330}}{15}$ or 1.21106, depending on whether you have your calculator set up to give you the exact or the approximate value.

What are the extra curly brackets for?

Another way of representing the list {2, 2, 3, 4, 4, 5} is to write it as

$$\{2,3,4,5\},\{2,1,2,1\}$$

where the first list is the list of values, and the second list is the number of times each value appears in the original list. (The second list is called a *frequency list*.)

So, calculating

$$stdDev(\{2,3,4,5\},\{2,1,2,1\})$$

should give you the same values, $\dfrac{\sqrt{330}}{15}$ or 1.21106.

Isn't it easier to just calculate the average of the values, rather than using the "`mean(`" function?

Sure. However, if you've already put in a long list for the standard deviation calculation, then you can just paste it in for the mean calculation. Or not. Your choice!