Name: _____ Hour: _____ Date: _____

Using the Calculator to Find Standard Deviation Notes

Standard Deviation:

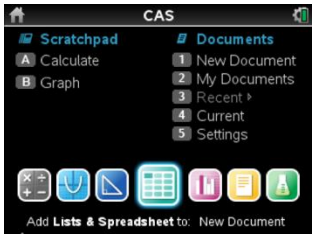
The process to calculate standard deviation by hand can be quite tedious, especially with large data sets. Statisticians use technology to calculate the standard deviation of a data set. We will use our calculators.

Example: You grow 20 crystals from a solution and measure the length of each crystal in millimeters. Here is your data:

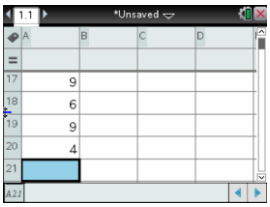
9, 2, 5, 4, 12, 7, 8, 11, 9, 3, 7, 4, 12, 5, 4, 10, 9, 6, 9, 4

Use your calculator to find the standard deviation of the length of the crystals.

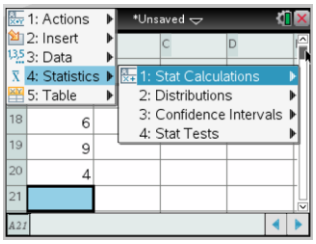
STEP 1: From the home screen select **"Add: Lists & Spreadsheet"**



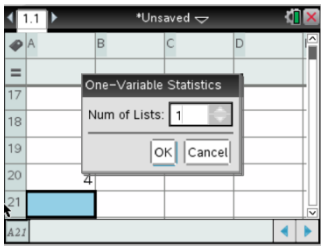
STEP 2: Enter the data into the spreadsheet. Make sure to press **"ENTER"** after every number.

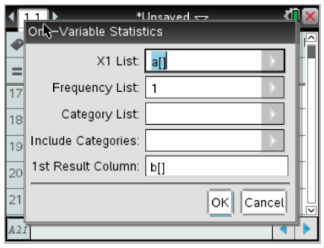


STEP 3: Press **"MENU"** then select **"4: Statistics", "1: Stat Calculations",** "**1: One Variable Statistics"**

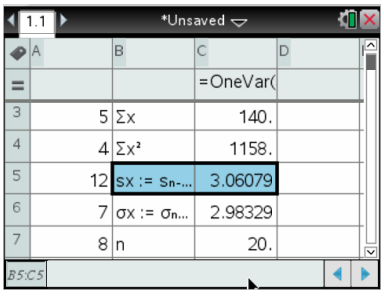


STEP 4: Select **"ok"** on the following two screens. *DO NOT CHANGE ANYTHING*!





STEP 5: Scroll back up through your spreadsheet and notice there are a lot of new entries in column B and C. Locate entry in column B that reads **"sx := …"**. This is the symbol that will denote our standard deviation. The entry directly to the left, in column C is the value of our standard deviation!



STANDARD DEVIATION =

More Examples! Use your calculator to find the standard deviations of each data set. Then use the standard deviation to compare the two data sets.

1) Fastest Recorded Speeds of Various Large Wild Cats (miles per hour)

70 50 30 40 35 30 30 40 15

Standard Deviation =

Fastest Record Speeds of Various Birds in Flight (miles per hour)

217 106 95 56 65 37 50 31 53 25 25 25

Standard Deviation =

Comparison:

2) The number of buttons on selected outfits

11 5 12 8 3 12 10 10 0 5 0 2 7 10

Standard Deviation =

The number of pockets in the same outfits

5 5 5 2 2 5 3 2 0 2 0 0 5 5

Standard Deviation =

Comparison: