Name	:
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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.

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

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

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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!

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3	5	Σx	140.			ΙI						
4	4	Σx²	1158.									
5	12	SX := Sn	3.06079									
6	7	σx := σn	2.98329									
7	8	n	20.									
B5:	C 5				•							

STANDARD DEVIATION =

<u>More Examples!</u> 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					
	Standa	ard Devi	iation =											
Fast	est Reco	ord Spee	ds of Va	rious Bir	ds in Fli	ght (mile	es per ho	our)						
	217	106	95	56	65	37	50	31	53	25	25	25		
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Comp	arison:													
2) The	number	of butt	ons on s	elected	outfits									
	11	5	12	8	3	12	10	10	0	5	0	2	7	10
	Standa	ard Devi	iation =											
The	e numbei	r of poc	kets in tł	ne same	outfits									
	5	5	5	2	2	5	3	2	0	2	0	0	5	5
	Standard Deviation =													

Comparison: