

Casio Stats Features

Probability Features:

Use the soft keyboard and tap the **CALC** tab.

! is Factorial. **!** Returns, $1 \cdot 2 \cdot 3 \cdots (n - 1) \cdot n$, e.g. $5! = 1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 = 120$.

You try **18!**.

nPr(is the number of permutations of n items taken r at a time.

You try **nPr(6,2)**.

nCr(is the number of combinations of n items taken r at a time.

You try **nCr(6,2)**.

From statistics the formula for the standard deviation is

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

Store the following values into lists.

list1	1	2	3	4	5	6	7	8
list2	63	76	78	79	84	89	91	95

For example enter the following. Use the **2D** tab.

$\{1, 2, 3, 4, 5, 6, 7, 8\} \Rightarrow$ list1

$\{63, 76, 78, 79, 84, 89, 91, 95\} \Rightarrow$ list2

The list features built into the calculator include:

sum which sums all the elements of a list.

You type: **sum(list1)**

prod which multiplies all the elements of a list.

You type: **prod(list2)**

dim(which returns the number of elements in a list.

You type: **dim(list2)**

sortA which sorts the list in ascending order. You try: **sortA(list2)**

sortD which sorts the list in descending order. You try: **sortD(list2)**

We can now define the standard deviation of list2 as

$$\sqrt{(\text{sum}((\text{list2} - \text{sum}(\text{list2})/\text{dim}(\text{list2})))^2)/(\text{dim}(\text{list2}) - 1)}$$

Use the data editor to get the two variable results for list1 and list2 and compare your answers. Use these two variable results to manually calculate linear regression. The formula for the slope in linear regression is given by

$$m = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$