

# Expectation Algebra and Lists.

*This resource was written by Derek Smith with the support of CASIO New Zealand. It may be freely distributed but remains the intellectual property of the author and CASIO.*

Select STAT mode from the main menu by using the arrow keys to highlight the STAT icon or pressing 2.

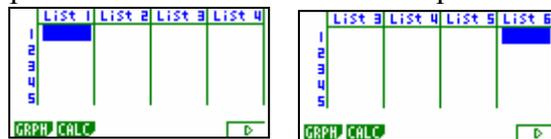


**Expectation algebra**

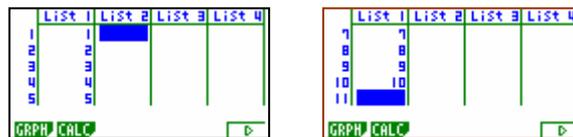
mean (A + B) = mean A + mean B	Var (A + B) = VAR(A) + VAR(B)
mean (nA) = n x mean (A)	VAR (nA + mB) = n <sup>2</sup> VAR(A) + m <sup>2</sup> VAR(B)
mean (A - B) = mean A - mean B	VAR (nA - mB) = n <sup>2</sup> VAR(A) + m <sup>2</sup> VAR(B)

In this part of the calculator you can apply basic row, column manipulations and have access to the univariate and bivariate analysis of statistical data.

There are 6 columns and each can have up to 255 entries i.e. 255 rows deep.



**Example:** Enter in the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 into **List 1**. As shown below, press **EXE** after each entry and the cursor will move down to the next row.

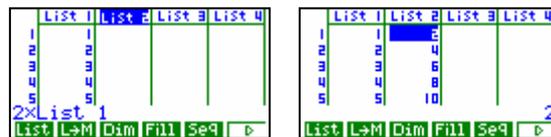


Now, move the cursor with the arrows so that it is 'sitting' over the **List 2** as shown here:



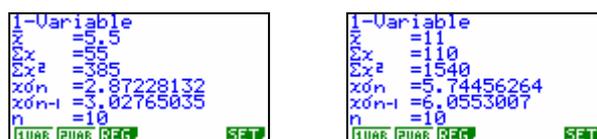
What we want to do is multiply List 1 entries by 2 – so press 2, then x, then **OPTN**, then **F1**, for List and **F1** again so that List appears on the screen - see diagram:

Now press 1 and then **EXE**



The list values in List 1 have been doubled, as seen in List 2.

Now view the summary statistics of List 1 and List 2 data.



You can see that these follow the Expectation Algebra rules.

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