CONTRIB

A program designed to display the contributions (the individual terms) for a chi-square test of homogeneity or independence. The TI-83/84 calculators (to my knowledge) do not have a way to access this information when performing a chi-square test. If a person wishes to know which particular variables are contributing the most or the least to the test statistic for further analysis, this program can help.

\*\*The user inputs the observed information in a contingency table in placed into matrix A.

\*\*The program outputs a message directing the user to matrix E where the contributions are stored. The contributions are stored relative to the position of the information in the table.

\*\*In matrix B the user can find the expected counts. The program will calculate these as well. Matrix C and D are needed for the computations of the expected counts.

Example:

Below we demonstrate how this program works. Consider a table 3 x 2:

If we wish to use the chi-square test on the TI-83/84 calculator, we need to compute the expected counts before we enter them into a matrix. These are computed in the table below.

When we perform a chi-square test using these tables we obtain 0.03423….

The drawback to the calculator is that we do not have access to the contributions (as far as I know). This program will give such information.

Using the program, we enter in matrix A before calling the program.



Now that matrix A is entered in the calculator, call the program and execute it.





Now that the computations are finished we may view the contributions.



To check that these are indeed the contributions, we may do the following.



The first command is the actual computations needed to perform the contribution and the second command is a call to a specific cell in matrix E. You may do this for any cell in matrix A. If you add up each entry in matrix E you should get the chi-square test statistic. This is shown below.

 

Notice this is the same chi-square test statistic value obtained from running the test. If you wish to view the expected counts call matrix B.

