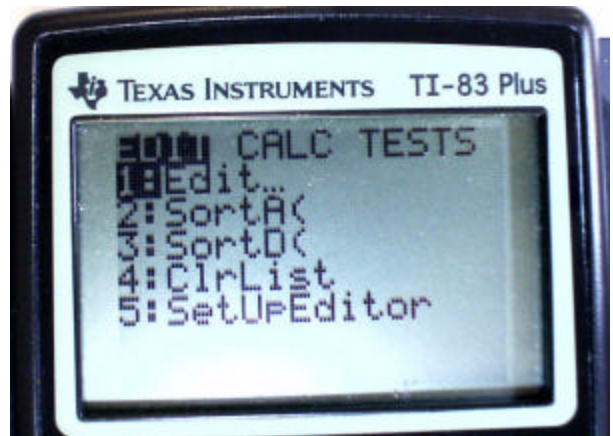


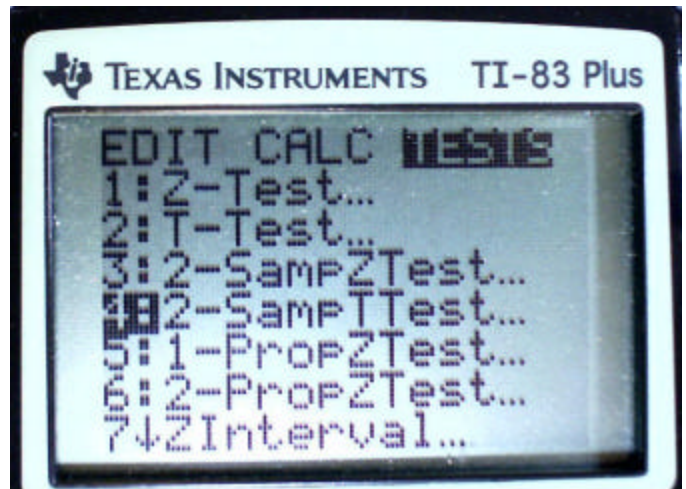
# Statistical Data Analysis: 2 Sample T-Test (It's different, but is it different enough?)

Press STAT

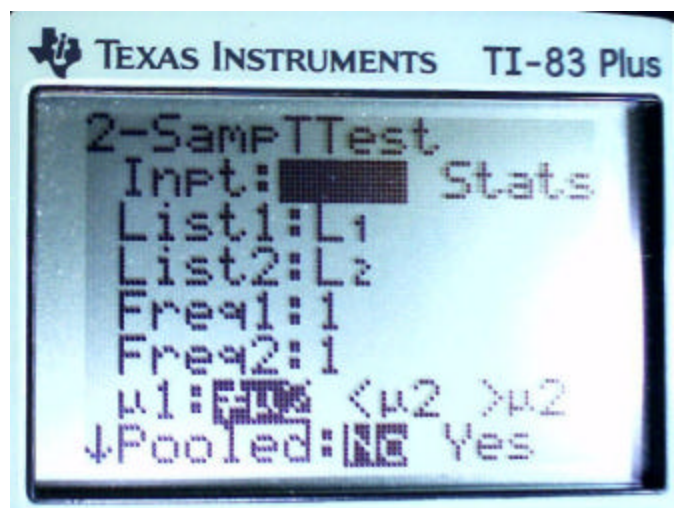
Enter your data into columns. Use L1 for your control. Enter each of your experimental groups in L2, L3, etc.



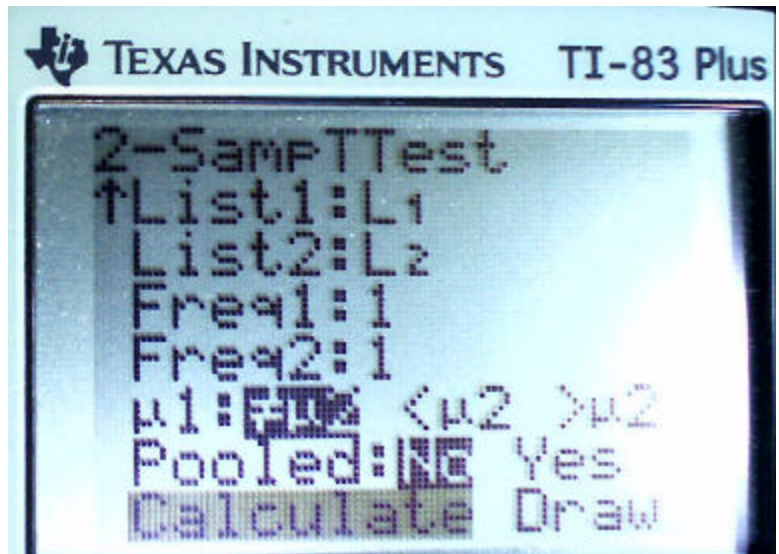
Press STAT. Go to TESTS. Scroll to line 4 (2-SampTTest) and press ENTER.



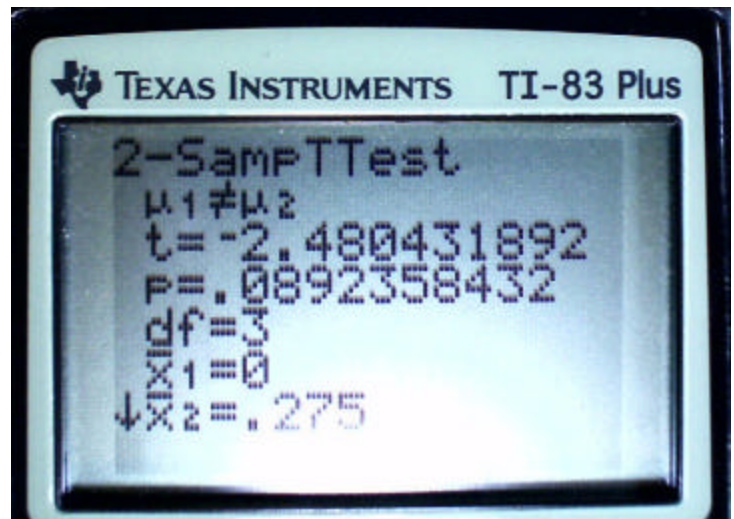
Make sure you are comparing L1 to L2. You can change the data sets being compared by highlighting the List and using  $2^{\text{nd}}$  - 3 for L3, etc. depending on what you are trying to prove.



Determine which argument you want to test. The most general is the "not equal". What that means is that you are testing the idea that L2 is actually not equal to L1 and only appearing that way due to random chance. Selecting one of the others narrows the argument to L2 is either "Greater Than" or "Less Than" L1. Scroll down (off the screen) to CALCULATE and hit ENTER.



You will get this readout. Notice that it reminds you which test you ran (2-Sample T Test) and what the argument was that you were testing (L2 was not equal to L1).



The line you care about is your p score (p= xxxxxx)

- If it is LESS THAN .05, then your argument is statistically valid. (L2 is different enough from L1 that the difference cannot be an accident. Whatever you did in your experiment caused the difference.)
- If p is GREATER THAN .05, then the difference could be just a random coincidence. You cannot say that L1 and L2 are any different from each other.