

Lab 2: Two-sample Tests

Stat 244

Winter 2012

due February 9

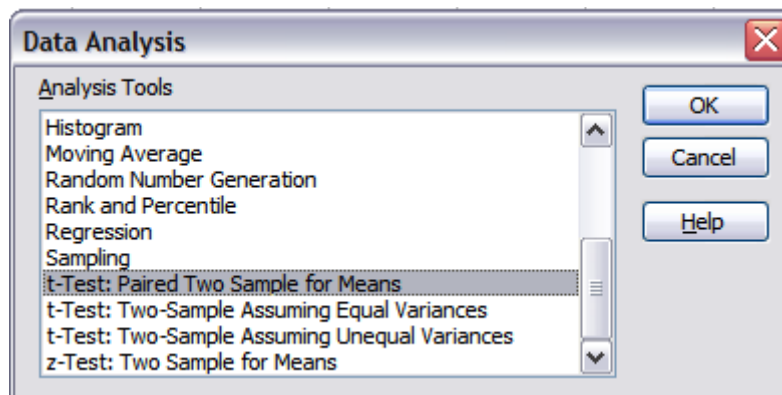
This lab must be done by yourself. Your name **MUST** be typed into the Excel spreadsheet (not handwritten on the printout).

The example shown below does not use the actual data set. The real assignment is at the end.

Matched Pairs

Enter the data in two columns in Excel. The first cell in each column should be a label, with the data values beginning immediately below it.

Select **Tools**→**Data Analysis**→**t-Test: Paired Two Sample for Means**.



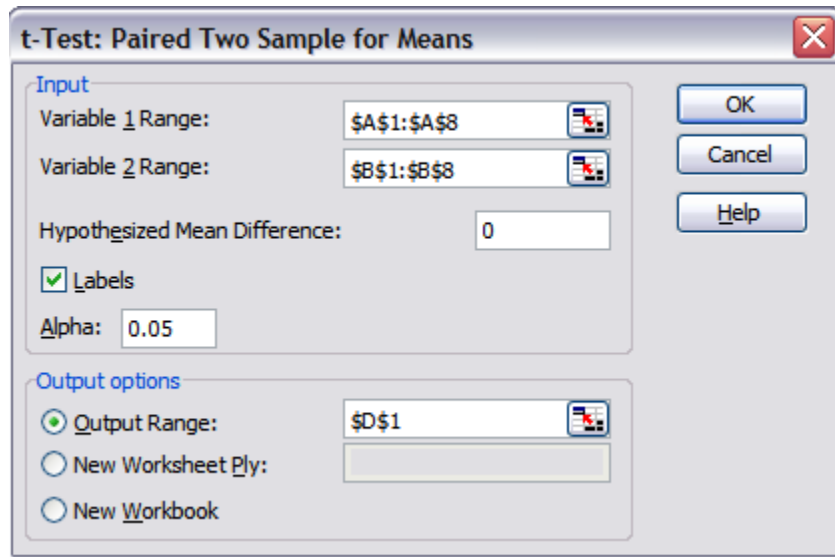
Variable 1 Range should indicate which cells contain your first column of numbers, including the label. (This won't necessarily be A1 through A8 as the screenshot shows. Make sure that it agrees with your own data set.)

Variable 2 Range should indicate which cells contain your second column of numbers, including the label.

The **Hypothesized Mean Difference** should be zero.

Check the **Labels** box, and leave **Alpha** at 0.05.

The **Output Range** should be an empty cell in your spreadsheet. This cell will be the upper left corner of the output that Excel creates.



After clicking **OK**, select **Format**→**Column**→**AutoFit Selection**.

To complete the problem, you must write your null and alternative hypotheses, your decision (Accept or Reject H_0), and a final statement, *in your own words*, interpreting that decision.

Independent Samples

Enter the data in the same manner as in the previous problem.

Select **Tools**→**Data Analysis**→**t-Test: Two-Sample Assuming Unequal Variances**.

Fill in the next dialogue box and format your output in the same manner as before.

Again, you must write your null and alternative hypotheses, your decision, and a final statement, *in your own words*, interpreting that decision.

Lab 2 (due Thursday, February 9, at the beginning of class)

Problem 1: Use the file called “Cholesterol.xlsx”. This file contains low density serum cholesterol measurements for 14 people who were on a cornflake diet, and the same 14 people when they were later switched to an oat bran diet. At the 5% level of significance, test to see if the cholesterol measurements were lower on the oat bran diet.

Problem 2: Use the file called “SAT.xlsx”. The file contains SAT math scores for 15 students in 2010 and 17 students in 2011. At the 5% level of significance, see if the data set supports the hypothesis that the mean score in 2011 was different than the mean score in 2010.

Make sure to include:

1. your null and alternative hypotheses, in the correct format
2. your decision (Accept or Reject H_0)
3. ***in your own words***, a final statement interpreting that decision.

The above items may be hand-written on the printed copy.

Also, either circle or highlight the following two items on your output:

1. the test statistic
2. the p-value