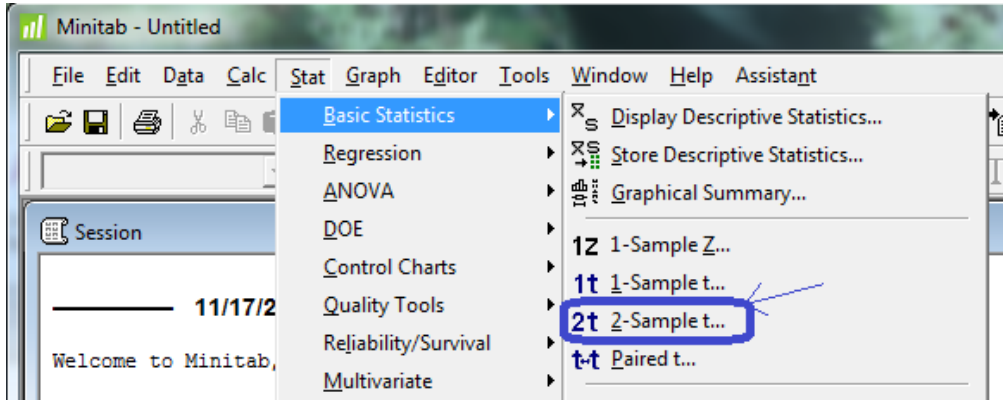


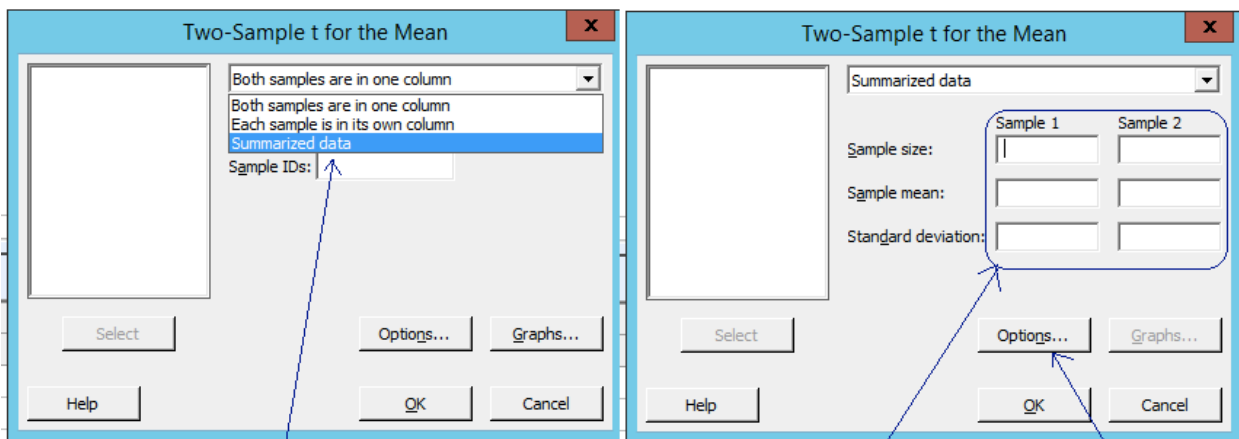
Math 155 – Minitab instructions for 2-sample t-tests

Here is the procedure for using Minitab to calculate the test statistic, t , as well as the corresponding P -value, for a two-sample t -test. (Note: the procedure for other hypothesis test methods is very similar!)

1. Select the “Stat” menu, then “Basic Statistics,” then “2-Sample t .”



2. Select “Summarized data” from the drop-down menu, and proceed to enter your sample data. Then, click “Options...”

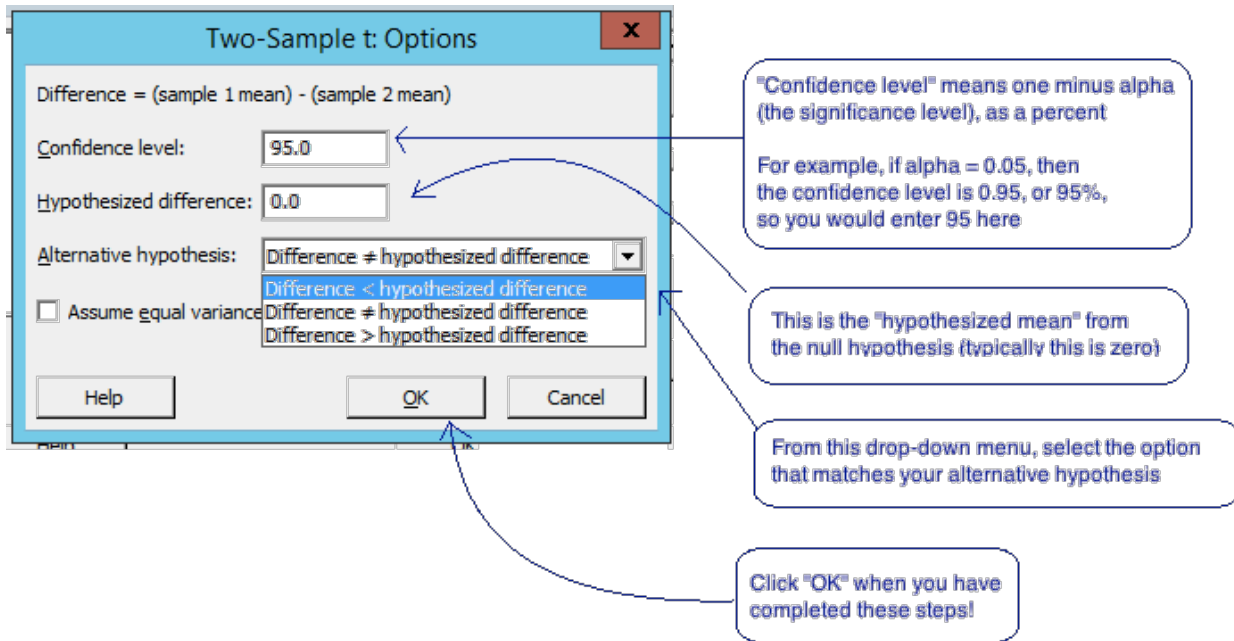


A. Select "Summarized data"

B. Enter the sample data

C. Select "Options"

3. Fill in the “options” menu according to the details of your hypothesis test. Then click “OK.”



Details on these options:

- “Confidence Level:” This is equal to $1 - \alpha$, entered as a percentage. (For example, if you selected $\alpha = 0.01$, then the corresponding “confidence level” would be $1 - 0.01 = 0.99$, or 99%, so you would enter 99 for the “confidence level.”)
- “Test difference” should be zero (this indicates the null hypothesis is $\mu_1 - \mu_2 = 0$)
- “Alternative:” select the type of alternative hypothesis you are using from the drop-down menu. (Note that the “less than” or “greater than” options are relative to the order in which you entered your samples in the preceding step.)

4. The options window disappeared when you clicked “OK.” Now click “OK” in the 2-sample t window to carry out the hypothesis test. (No diagram for this one – just click the “OK” button!)

5. Now, look at the Session Window for the test results. The value of the test statistic (“T-value”) and the P-value are clearly stated on the last line.

Welcome to Minitab, press F1 for help.

Two-Sample T-Test and CI

Sample	N	Mean	StDev	SE Mean
1	17	0.530	0.630	0.15
2	17	0.39	1.12	0.27

Difference = $\mu(1) - \mu(2)$
 Estimate for difference: 0.140
 95% CI for difference: (-0.502, 0.782)
 T-Test of difference = 0 (vs not =): **T-Value = 0.45 P-Value = 0.657** DF = 25