

## Conducting an Independent Samples t-test in Vassar Stats

### A. Key terms:

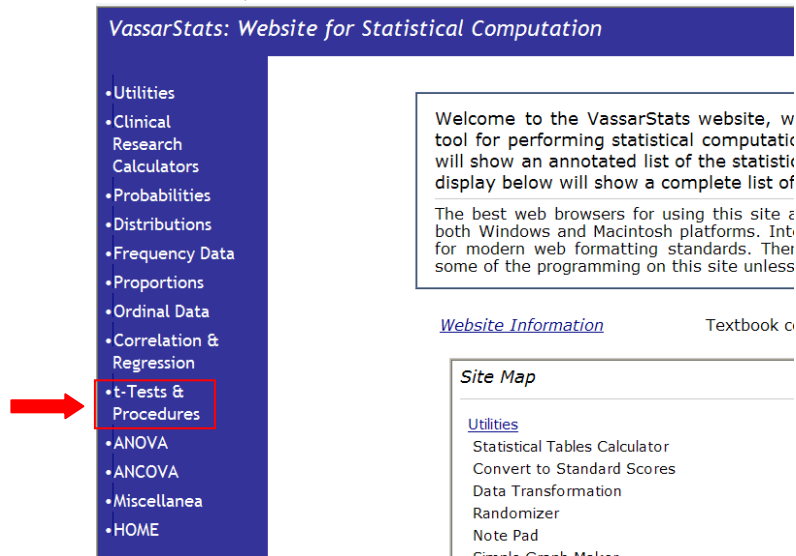
**t-test:** compares the means of two groups to see if the results are more likely due to chance or the effect of the IV on DV

**Independent samples t-test:** participants in two groups are different

### B. Running the analysis:

1. Go to Vassarstats: <http://faculty.vassar.edu/lowry/VassarStats.html>

2. In the left-hand column, click **t-test & Procedures**



VassarStats: Website for Statistical Computation

- Utilities
- Clinical Research Calculators
- Probabilities
- Distributions
- Frequency Data
- Proportions
- Ordinal Data
- Correlation & Regression
- **t-Tests & Procedures**
- ANOVA
- ANCOVA
- Miscellanea
- HOME

Welcome to the VassarStats website, a tool for performing statistical computation. This page will show an annotated list of the statistical procedures available. The display below will show a complete list of the procedures.

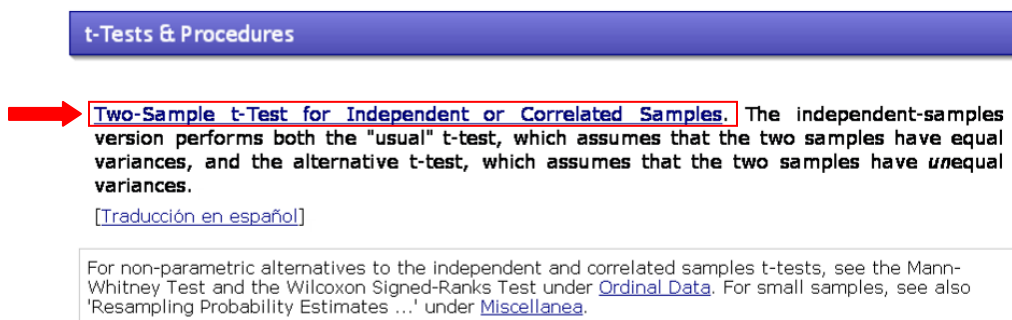
The best web browsers for using this site are Netscape 4.0 and above on both Windows and Macintosh platforms. Internet Explorer 4.0 and above for modern web formatting standards. There are some of the programming on this site unless otherwise noted.

[Website Information](#)      [Textbook](#)

**Site Map**

- [Utilities](#)
- Statistical Tables Calculator
- Convert to Standard Scores
- Data Transformation
- Randomizer
- Note Pad
- Simple Graph Maker

3. At the top of the page, click **Two-Sample t-Test for Independent or Correlated Samples**



t-Tests & Procedures

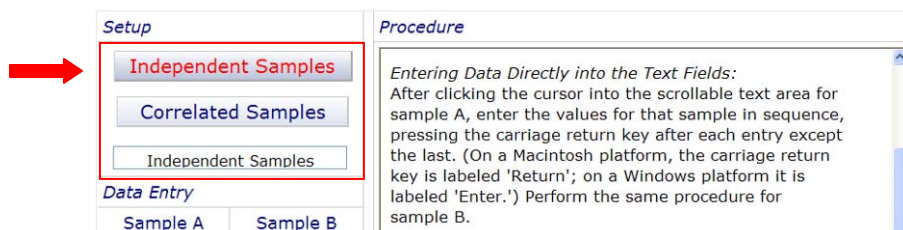
**Two-Sample t-Test for Independent or Correlated Samples.** The independent-samples version performs both the "usual" t-test, which assumes that the two samples have equal variances, and the alternative t-test, which assumes that the two samples have *unequal* variances.

[\[Traducción en español\]](#)

For non-parametric alternatives to the independent and correlated samples t-tests, see the Mann-Whitney Test and the Wilcoxon Signed-Ranks Test under [Ordinal Data](#). For small samples, see also 'Resampling Probability Estimates ...' under [Miscellanea](#).

**Single Sample t-Test.** For the significance of the difference between the observed mean of a sample and a hypothetical mean of the population from which the sample is randomly drawn.

4. Select **Independent Samples**



**Setup**

**Independent Samples**

Correlated Samples

Independent Samples

**Data Entry**

Sample A      Sample B

**Procedure**

Entering Data Directly into the Text Fields:  
After clicking the cursor into the scrollable text area for sample A, enter the values for that sample in sequence, pressing the carriage return key after each entry except the last. (On a Macintosh platform, the carriage return key is labeled 'Return'; on a Windows platform it is labeled 'Enter.')

Perform the same procedure for sample B.

5. Enter data for your first group in **Sample A column**
6. Enter data for your first group in **Sample B column**
- \* **Ensure there is not an extra space below either data set**

*Data Entry*

Sample A	Sample B
1	8
8	4
2	5
5	6
3	4
6	2
5	3
7	1
5	0

Please be sure to perform the Data Check procedure.

7. Click the **calculate** button
8. Scroll down to review your results
9. Record the following values (2-3 decimal places) on a separate piece of paper: **mean, SS, and n** for each group, and the **t-value, p-value** (two-tailed) and **df**.

*Data Summary*

	A	B	Total
n	9	9	18
ΣX	42	33	75
ΣX <sup>2</sup>	238	171	409
SS	42	50	96.5
mean	4.6667	3.6667	4.1667

*Results*

Mean <sub>a</sub> - Mean <sub>b</sub>	t	df	P	one-tailed	two-tailed
1	+0.88	16		0.1959425	0.391885

**C. Calculating SD from SS:**

$$SD = \sqrt{\frac{SS}{n-1}}$$

**Example:**

**If, SS = 8 and n = 3**

**Then, SD =  $\sqrt{\frac{8}{(3-1)}} = 2$**