

<p>Type of Problem</p> <p>Testing a claim about two proportions</p>	<p>Test Statistic Formula</p> $z = \frac{(\hat{p}_1 - \hat{p}_2) - (p_1 - p_2)}{\sqrt{\hat{p}\hat{q}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$ <p>or</p> $z = \frac{(\hat{p}_1 - \hat{p}_2)}{\sqrt{\hat{p}\hat{q}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$	<p>Finding the Test Statistic and P-Value</p> <p>2-PropZTest</p> <p>Enter x_1, n_1, x_2, n_2, choose "$>$" for right tail test "$<$" for left tail test "\neq" for two tail test</p> <p>2-PropZInt for C.I.</p>	<p>Example</p> <p>Among 2823 occupants not wearing seat belts, 31 were killed. Among 7765 occupants wearing seat belts, 16 were killed. Use a 0.05 significance level to test the claim that the fatality rate is higher for those not wearing seat belts.</p>										
<p>Type of Problem</p> <p>Testing a claim about two means: Independent samples</p>	<p>Test Statistic Formula</p> $t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$ <p>or</p> $t = \frac{(\bar{x}_1 - \bar{x}_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$	<p>Finding the P-Value</p> <p>2-SampTTest</p> <p>Enter $\bar{x}_1, s_1, n_1, \bar{x}_2, s_2, n_2$, choose "$>$" for right tail test "$<$" for left tail test "$\neq$" for two tail test</p> <p>2-SampTInt for C.I.</p> <p>ALWAYS choose "NO" for "pooled"</p> <p>Hint: df = the smaller of $n_1 - 1$ and $n_2 - 1$</p>	<p>Example</p> <table border="1" data-bbox="1071 567 1380 714"> <thead> <tr> <th colspan="2">Number of Words Spoken in a Day</th> </tr> <tr> <th>Men</th> <th>Women</th> </tr> </thead> <tbody> <tr> <td>$n_1 = 186$</td> <td>$n_2 = 210$</td> </tr> <tr> <td>$\bar{x}_1 = 15,668.5$</td> <td>$\bar{x}_2 = 16,215.0$</td> </tr> <tr> <td>$s_1 = 8632.5$</td> <td>$s_2 = 7301.2$</td> </tr> </tbody> </table> <p>level to test the claim that men and women speak the same mean number of words in day.</p>	Number of Words Spoken in a Day		Men	Women	$n_1 = 186$	$n_2 = 210$	$\bar{x}_1 = 15,668.5$	$\bar{x}_2 = 16,215.0$	$s_1 = 8632.5$	$s_2 = 7301.2$
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<p>Type of Problem</p> <p>Testing a claim about two dependent samples</p>	<p>Test Statistic Formula</p> $t = \frac{\bar{d} - \mu_d}{\frac{s_d}{\sqrt{n}}}$ <p>or</p> $t = \frac{(\bar{d} - \mu_d)\sqrt{n}}{s_d}$	<p>Finding the P-Value</p> <p>TTest</p> <p>Enter \bar{x}_d, s_d, n, choose "$>$" for right tail test "$<$" for left tail test "\neq" for two tail test</p> <p>TInterval for C.I.</p> <p>Hint: df = $n - 1$</p>	<p>Example</p> <p>Use the sample data in with a 0.05 significance level to test the claim that for the population of students, the mean change in weight from September to April is equal to 0 kg.</p> <p>Hint: Key word "change" or "difference"</p>										

c) Test Statistic Formula

$$c) t = \frac{(\bar{x}_1 - \bar{x}_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

d) Test Statistic Calculation (Calculator Command)

$$t = \frac{(103.5 - 101.8)}{\sqrt{\frac{5.9^2}{85} + \frac{6.4^2}{67}}} = 2.7624$$

$$d) t = 2.7624$$

2-SampTTest