

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{(N_1 - 1)s_1^2 + (N_2 - 1)s_2^2}{N_1 + N_2 - 2}\right)\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}}$$

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T-Test Calculator for 2 Dependent Means

The value of t is -2.

Explanation of results

The output of this calculator is pretty straightforward. The values of t and p appear at the bottom of the page. If the text is blue, your result is significant; if it's red, it's not. The only thing that might catch you out is the way that we've rounded the data. The data you see in front of you, apart from the t and p values, has been rounded to 2 significant figures. However, we did not round when actually calculating the values of t and p . This means that if you try to calculate these values on the basis of the summary data provided here, you're likely going to end up with a slightly different - and less accurate - result.

Treatment 1	Treatment 2	Diff(T2 - T1)	Dev(Diff - M)	Sq. Dev
77	80	3	6.33	40.11
62	58	-4	-0.67	0.44
61	61	0	3.33	11.11
80	76	-4	-0.67	0.44
90	79	-11	-7.67	58.78
72	69	-3	0.33	0.11
86	90	4	7.33	53.78
59	51	-8	-4.67	21.78
88	81	-7	-3.67	13.44
		M: -3.33		S: 200



Significance Level:

- ☐ 0.01
☒ 0.05
☐ 0.10

One-tailed or two-tailed hypothesis?:

- ☒ One-tailed
☐ Two-tailed

Difference Scores Calculations

Mean: -3.33

$\mu = 0$

$S^2 = SSdf = 200/(9-1) = 25$

$S^2_M = S^2/N = 25/9 = 2.78$

$S_M = \sqrt{S^2_M} = \sqrt{2.78} = 1.67$

T-value Calculation

$t = (M - \mu)/S_M = (-3.33 - 0)/1.67 = -2$

The value of t is -2. The value of p is .04026. The result is significant at $p < .05$.

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