

LEARNING CHECK

Let's get a little more practice hand-calculating the paired samples t test. When we discussed "The Tool" of the paired samples t test, we examined data by looking at whether workers were more productive before or after lunch. Here again are those data that you collected from six employees using a 1 (*minimal productivity*) to 7 (*a great deal of productivity*) range.

Before Lunch	After Lunch	Difference Score (D)
5	4	1
6	7	-1
6	4	2
5	2	3
4	1	3
5	6	-1

Questions to Answer:

1. What is the hypothesis being tested?
2. What is the mean difference score?
3. What is the standard error of the difference between the means?
4. What is the t statistic?
5. How many degrees of freedom do the researchers have for this analysis?
6. By using Appendix B, approximate the critical value that was used to see whether we reject or do not reject the null hypothesis.
7. What is the probability that the difference between the two groups' means was due to random variation?
8. Did the researcher reject or fail to reject the null hypothesis?
9. Given your answer to the previous question, what does that mean in plain English?
10. By using Cohen's (1992) guidelines, interpret the effect size.