Student's *t*-test - One Sample and Paired Samples

1. Describe the reasons why you would use a one-sample *t*-test to analyze certain data.

2. Explain how you would obtain an estimate of σ if you do not actually know it so that you can use a one-sample *t*-test. In other words, from where would you obtain an estimate of a population standard deviation?

3. Sample standard deviations are biased estimates of population standard deviations. Explain how you would obtain an unbiased estimate of a population standard deviation if you do not know σ. You can answer this by appealing to a formula if you wish.

4. Compare the formula for the z-test with that for the one-sample *t*-test and note the similarities and differences in the numerator and the denominator. This will help you remember the differences between these two inferential statistics.

5. Describe the reasons why you would use a dependent-samples (paired-samples) *t*-test to analyze certain data.

6. How many units of analysis (e.g., scores/values) do you need to have for each experimental unit (e.g., person) in order to analyze your data with a dependent-samples (paired-samples) *t*-test?