**Psy 430  
 Lab 2 Conditioning & Learning  
Between- versus Within-Subject Designs**

A researcher wants to investigate the type of reinforcement (positive vs. negative) that leads to better learning of a new spatial-motor task. Participants must learn to trace a star pattern using a mirror drawing apparatus. Participants receive 50 training trials for each condition and are required to keep the pencil moving at all times during a trial. Participants in the positive reinforcement condition received 50 cents for each error-free trial. Participants in the negative reinforcement condition are charged 50 cents for each practice trial they need. Participants can avoid paying the 50 cent fee by completing an error-free trial. Participants were required to keep practicing until they reached the criterion of 5 consecutive error-free trials. The number of practice trials needed to reach criterion was as follows:

Positive Negative

15 16

7 12

6 7

20 23

12 14

19 22

15 20

5 10

18 25

6 10

22 28

9 7

1. Assume that the data are from an independent measures experiment using two separate samples, each with n = 12 participants. Do the data indicate a significant difference between the two treatments? Use a two-tailed test with alpha = .05.

*Please run the analysis in SPSS and print the output. Please type a few sentences that report the results in APA format.*

2. Now assume that the data are from a repeated-measures experiment using the same sample of   
n = 12 participants in both treatments. Conduct a t-test for repeated measures. Do the data indicate a significant difference between the two treatments? Again, use a two-tailed test with alpha = .05.

*Please run the analysis in SPSS and print the output. Please type a few sentences that report the results in APA format.*

3. How do you explain the different outcomes? (Compare the mean differences obtained. Compare the standard error of the mean vs. standard error of the mean difference for the two different tests. Be sure to describe which benefit of a repeated-measures design this example illustrates.  
*Please type your answer.*