# PSY 10 - Analysis of Psychological Data
# Quiz # 08

Professor Depaoli

4/4/2017

# Red Scantron Instructions

1. Use pencil to fill out your Scantron.
2. Bubble your name and ID number on front.
3. Do NOT put a zero before your ID number.
4. Use the same ID number as the first quiz (no extra zero).
5. Use the same name as the first quiz.
6. Make heavy, **dark** marks that fill the circle **completely** and **precisely**.
7. If you need to correct any answer, make sure you erase the original one **completely**.

A research study used a significance test to compare independent samples of $n = 11$ in each treatment condition. One treatment had $M_1 = 7$ with $s_1^2 = 2$, and the other had $M_2 = 5$ with a variance of $s_2^2 = 3$. (Use $\alpha = .05$, two-tailed test.)

1. What is the pooled sample variance?
   (a) 1.58 (b) 2.00 (c) 2.50 (d) 3.00
2. What is the standard error?
   (a) 0.45 (b) 0.67 (c) 1.58 (d) 2.50
3. What is the *t*-statistic?
   (a) $t = 0.80$ (b) $t = 1.27$
   (c) $t = 2.99$ (d) $t = 4.44$
4. What is your decision?
   (a) Accept $H_0$ (b) Fail to reject $H_0$
   (c) Reject $H_1$ (d) Reject $H_0$
5. What are the 99% confidence limits?
   (a) 0.72 to 3.28 (b) -2.50 to 6.50
   (c) 0.09 to 3.91 (d) -5.11 to 9.11

**Equations**

$$t_{obt} = \frac{(M_1 - M_2) - (\mu_1 - \mu_2)}{s_{M1-M2}}$$

$$s_{M_1-M_2} = \sqrt{\frac{s_p^2}{n_1} + \frac{s_p^2}{n_2}}$$

$$s_p^2 = \frac{df_1 s_1^2 + df_2 s_2^2}{df_1 + df_2}$$

Confidence Limits:
$(M_1 - M_2) \pm t_{crit}(s_{M1-M2})$

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