

The Skidmore Honor Code is in effect for this exam, as always. You'll be asked to write out the Honor Code statement at the end of the exam. Read each question carefully and answer it completely. Show all your work, so that you may receive partial credit. Keep in mind that a point is roughly equal to a minute, so don't spend too much or too little time on your answer to any question. Good Luck!

1. Betz and Thomas (1979) have reported a distinct connection between personality and health. They identified three personality types who differ in their susceptibility to serious stress-related illness (heart attack, high blood pressure, etc.). The three personality types are *alphas* (who are cautious and steady), *betas* (who are carefree and outgoing) and *gammas* (who tend toward extremes of behavior, such as being overly cautious or very careless). For the analysis below, lower scores indicate poorer health. Complete the analysis and interpret the results. [15 pts]

ANOVA Table for Health

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Personality		573.0			.0191	9.206	.732
Residual	.	1680.8					

Means Table for Health

Effect: Personality

	Count	Mean	Std. Dev.	Std. Err.
Alpha	10	44.200	9.807	3.101
Beta	10	47.200	7.376	2.332
Gamma	10	36.800	6.015	1.902

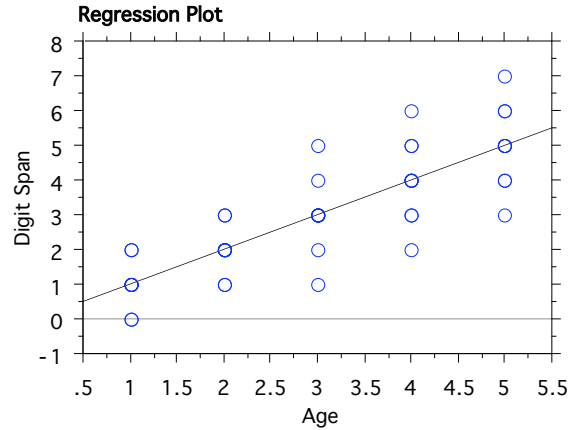
2. Mook argues that external validity is not always the purpose behind psychological research. For each of the studies below, indicate why the study is not externally valid, then why it's not a concern, given the intentions of the researcher(s). [10 pts]

Study	Why not externally valid	Why lack of EV is not a concern
Argyle (glasses and intelligence)		
Higgins & Marlatt (anxiety and alcohol consumption)		
Hecht (dark adaptation)		
Milgram (shock and obedience)		

3. Many researchers have been interested in how memory varied with age. To assess memory Dr. Lou King used a digit span task (number of numbers that can be repeated in the proper order). He studied children between one and five years of age. Interpret the results of his study (as seen below). If a child is three years old, what would you predict that child's digit span would be? If a child is six years old, what would you predict that child's digit span would be? What portion of variability is shared between age and digit span? Assuming that you are unwilling to attribute the relationship to age causing digit span, how would you explain the relationship you observe? [10 pts]

Regression Summary
Digit Span vs. Age

Count	50
Num. Missing	0
R	.839
R Squared	.704
Adjusted R Squared	.698
RMS Residual	.935



ANOVA Table

Digit Span vs. Age

	DF	Sum of Squares	Mean Square	F-Value	P-Value
Regression	1	100.000	100.000	114.286	<.0001
Residual	48	42.000	.875		
Total	49	142.000			

Regression Coefficients

Digit Span vs. Age

	Coefficient	Std. Error	Std. Coeff.	t-Value	P-Value
Intercept	-2.665E-15	.310	-2.665E-15	-8.589E-15	>.9999
Age	1.000	.094	.839	10.690	<.0001

4a. Suppose that a moderate dose of Drug A, taken on a daily basis for a month, is thought to ameliorate the symptoms of depression. You've developed a new drug (Drug B) that you think may be even more effective. You think that your drug may be more effective, possibly even in smaller dosages, so you want to compare the effectiveness of your drug at both small and moderate dosages. Design a study that assesses the effectiveness of Drug B. Provide plenty of detail about your study. [20 pts]

4b. Given your design, complete the source table seen below and tell me what you would conclude. [5 pts]

Source	df	SS	MS	F
Treatment			20	1.0
Error			20	
Total				

4c. If you obtained the results seen above, what would you do next? [5 pts]

5. So far, we've learned about correlation/regression analyses and ANOVA. How do these two statistical approaches differ? What types of questions are they intended to address? [5 pts]