

As always, the Skidmore Honor Code is in effect, so at the end of the exam you will need to sign a sheet attesting to your adherence to the code. Read each question carefully and answer it completely. Be sure to show all your work, otherwise I cannot give you partial credit for your work. Remember to think of a point as a minute, so you should expect to spend roughly 15 minutes on a 15-point question, etc. If a question is unclear to you, be sure to ask me for clarification. Good luck and have a great weekend.

1. We are about to conduct a study regarding the impact of duration of exposure on the ability of people to recognize faces. To finesse the issue of the actual durations used, I'll call them Short, Medium, and Long. Consistent with our design, each participant will be exposed to each of the three durations. The DV for this analysis is the percent Hits (saying Old to an Old item). Suppose that the results of the experiment come out as seen below. Complete the analysis and interpret the results as completely as you can. If the results turned out as seen below, what would they mean to you? [15 pts]

**ANOVA Table for Duration**

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Subject		3345.					
Category for Duration		457.			<.0001	93.205	1.000
Category for Duration * Subject		225.					

**Means Table for Duration**

**Effect: Category for Duration**

	Count	Mean	Std. Dev.	Std. Err.
Short	24	43.833	7.257	1.481
Medium	24	47.792	7.342	1.499
Long	24	49.917	6.978	1.424

2. A psychologist studying human memory would like to examine the process of forgetting. One group of participants is required to memorize a list of words in the evening just before going to bed. Their recall is tested 10 hours later in the morning. Participants in the second group memorize the same list of words in the morning and then their memories are tested 10 hours later after being awake all day. The psychologist hypothesizes that there will be less forgetting during sleep than during a busy day. The recall scores and some summary information for the two samples of college students are seen below. Interpret the results of this study as completely as you can. [15 pts]

	<b>Asleep Scores</b>	<b>Awake Scores</b>
	15	15
	13	13
	14	14
	14	12
	16	14
	15	13
	16	11
	15	12
	16	13
	15	13
	17	12
	14	14
<b>T</b>	180	156
<b>SS</b>	14	14
<b>Mean</b>	15	13

3. Describe clearly the circumstances under which a repeated measures analysis will not yield a larger F-ratio than an independent groups analysis. Accompany your description with source tables to illustrate your point. [10 pts]

4. If you conducted a single-factor independent groups experiment with 7 levels and  $n = 25$ , what would your df be? [5 pts]

<u>SOURCE</u>	<u>df</u>
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Treatment	
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Error	
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Total	
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5. Searching for the dangers of caffeine, a researcher adds two types of caffeine (those found in coffee and chocolate) to the water supply of groups of laboratory-bred rats. This species ordinarily survives about 13 months. The water supply of a control group of rats did not have any caffeine added. The DV is the number of days that each rat lives. Analyze the results of this experiment as completely as you can. What would you do next? [10 pts]

Coffee Caffeine	Chocolate Caffeine	No Caffeine
398	401	412
372	389	386
413	413	394
419	396	409
408	406	415
393	378	401
387	382	384
414	417	398

**ANOVA Table for Days Lived**

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Caffeine		33.			.9194	.169	.061
Residual		4136.					

**Means Table for Days Lived**

Effect: Caffeine

	Count	Mean	Std. Dev.	Std. Err.
Chocolate	8	397.750	14.140	4.999
Coffee	8	400.500	16.009	5.660
None	8	399.875	11.606	4.103