

Lab 15: Final Exam Review

- 1) Explain when and why post hoc tests are used.
- 2) How many groups are in each of the following designs?
 - a. 2X2 between groups
 - b. 2X3 mixed (2=within, 3=between)
 - c. 2X2X4 within groups
 - d. 2X2X4 between groups
- 3) What are the advantages of using a 2-way ANOVA over a 1-way ANOVA?
- 4)
 - a. In a 1-way ANOVA, what are the possible sources of variance?
 - b. How do these sources relate to the F-ratio?
- 5) In a 2-way ANOVA, what are the possible sources of variance?
- 6) Define the following terms:
 - a. Main Effect
 - b. Interaction
- 7) If the MS Between increases, what happens to the F-ratio?
 - a. Goes down
 - b. Goes up
 - c. Stays the Same
 - d. Turns Negative
- 8) If you are computing a 2x3 (A and B) factorial ANOVA, with 100 subjects per group, which is TRUE concerning the critical values for the F ratios?
 - a. A is different than B, and both are different than AxB
 - b. A and B are the same, but different than AxB
 - c. A, B, and AxB are all the same
 - d. B and AxB are the same, while A is different
- 9) A researcher is interested in the effects of music on worker productivity. She randomly chooses 9 subjects and randomly assigns them to 3 different conditions (no music, metal, & jazz). The number of parts per hour the subjects produced are given below. Conduct the appropriate test using an alpha of .05.

No Music	Metal	Jazz
21	27	31
25	30	30
16	29	38

- 10) A researcher is interested in the relationship of age and past drug experience to current drug interest. He forms 4 groups of people as indicated in the table below.

The subjects are each given the opportunity to try a large number of drugs under medical supervision. The number of different drugs tried for each person is presented in the table. Conduct the appropriate test using an alpha of .05.

18 year Addicts	18 year Naives	50 year Addicts	50 year Naives
8	3	9	5
2	4	4	4
7	6	7	5
6	1	3	0
6	2	8	2
5	0	5	3

- 11) The following data is from a random sample of 20 college students. Suggest research questions and indicate the descriptive and inferential statistics that would be required to answer the question. Try to ask questions that will require the use a variety of the techniques we have employed this semester. (Note: Class is the place in college; 1=freshman, 2=sophomore, 3=junior, 4= senior. Income is in thousands of dollars; EG: 10 = \$10,000.)

Subject	Sex	Class	GPA	Income	ACT
1	F	4	3.5	10	24
2	F	1	2.6	9	19
3	F	2	1.8	5	20
4	M	3	3.0	15	28
5	M	4	3.3	4	28
6	F	3	2.9	12	21
7	F	2	3.9	3	30
8	M	2	2.0	15	29
9	F	3	3.2	9	25
10	F	3	3.7	5	26
11	F	4	1.5	20	20
12	F	1	2.6	18	18
13	M	4	3.0	7	20
14	F	4	3.8	8	22
15	F	2	2.8	10	23
16	F	3	1.9	12	27
17	M	1	2.5	10	26
18	F	1	3.5	2	22
19	M	4	3.0	3	20
20	F	2	2.6	13	27