

Pre-lab for ANOVA

Q1:

A large randomized trial compared an experimental drug and 9 other standard drugs for treating motion sickness. An ANOVA test revealed significant differences between the groups. The investigators wanted to know if the experimental drug (“drug 1”) beat any of the standard drugs in reducing total minutes of nausea, and, if so, which ones. The p-values from the pairwise t tests (comparing drug 1 with drugs 2-10) are below.

Drug 1 vs. drug ...	2	3	4	5	6	7	8	9	10
p-value	.05	.3	.25	.04	.001	.006	.08	.002	.01

- a. Which differences would be considered statistically significant using a Bonferroni correction? or Holm-Hochberg correction?

Q2:

In the grade three of high school X, there are four kinds of classes using various teaching methods to teach mathematics. To identify whether the teaching method makes sense, five students’ math scores are randomly chosen from the classes after the final exam.

Class 1	75	77	70	88	72
Class 2	83	80	85	90	84
Class 3	65	67	77	68	65
Class 4	72	70	71	65	82

Q3:

将一种生长激素配成 M1, M2, M3, M4 和 M5 五个浓度, 并用 H1、H2 和 H3 三种时间浸泡某大豆品种的种子, 出苗 45 天后得各处理每一植株的平均干物质 (g) 如下。试问生长激素浓度与浸泡时间是否对植株的平均干物质重量有影响?

	H1	H2	H3
M1	13	14	14
M2	12	12	13
M3	3	3	3
M4	10	9	10
M5	2	5	4