

Lab #14: Two-Way ANOVA

- 1) A researcher is interested in which type of abdominal exercises are better, traditional sit-ups or a roller machine. She will measure the number of sit-ups each participant can perform after 30 days of doing the exercise described for 20 minutes per day. She also wants see if gender is a relevant variable. The control groups will not do any additional formal exercise. The roller group will use a roller machine and the sit-up group will do traditional sit-ups. Conduct the appropriate test using an alpha of .05.

Female Control	Female Roller	Female Traditional	Male Control	Male Roller	Male Traditional
5	7	9	5	9	11
7	10	13	8	4	14
8	11	12	5	12	9
5	12	11	9	9	16
5	8	15	2	10	14

- 2) How many groups are in each of the following designs?
- 3x3 between groups
 - 4x5 mixed (4=within, 5=between)
 - 2x4x4 within groups
 - 2x3x4 between groups
- 3) Treatment effect and error best corresponds with which type of variance?
- Between
 - Total
 - Main effect
 - Within
 - Interaction
- 4) What occurs when the effect of one factor is not the same at the levels of another.
- ANOVA
 - Variance factors
 - Main effect
 - Treatment effect
 - Interaction