Reading Quiz

* **5.1 Random selection.** True or False: Randomly selecting units from populations and performing an ANOVA allow you to generalize from the samples to the populations.
* **5.2 No random selection.** True or False: In datasets in which there was no random selection, you can still use ANOVA results to generalize from samples to populations.
* **5.3 Independence transformation?** True or False: If the dataset does not meet the independence condition for the ANOVA model, a transformation might improve the situation.
* **5.4 Comparing groups, two at a time.** True or False: It is appropriate to use Fisher’s LSD only when the *P*-value in the ANOVA table is small enough to be considered significant.
* **5.8 When to transform.** Which of the following is a reason to try transforming the data before fitting an ANOVA model?
  1. The group means are not similar.
  2. The residuals appear to have approximately a normal distribution.
  3. The group standard deviations do not appear to be similar.
  4. The data are independent.
* **5.13 Student survey.** You gather data on the following variables from a sample of 75 undergraduate students on your campus:
  1. Major
  2. Sex
  3. Class year (first year, second year, third year, fourth year, other)
  4. Political inclination (liberal, moderate, conservative)
  5. Sleep time last night
  6. Study time last week
  7. Body mass index
  8. Total amount of money spent on textbooks this year
* Assume that you have a quantitative response variable and that all of the above are possible explanatory variables. Classify each variable as quantitative or categorical. For each categorical variable, assume that it is the explanatory variable in the analysis and determine whether you could use a two-sample *t*-test or whether you would have to use an ANOVA.