Exam #4 Objectives

For Exam #4, a well-prepared student should be able to

• articulate how confidence intervals and significance tests work as inference methods
• identify variable, population(s), and parameter(s) of interest
• identify relevant sample(s) and statistic(s)
• distinguish between standard deviation and standard error for a sampling distribution
• distinguish between a $z$ statistic and a $t$ statistic
• understand the basic characteristics of $t$-distributions
• understand the general idea of robustness
• check conditions under which a given inference method applies
• carry out an appropriate method for computing a confidence interval for any of the following:
  – mean for one population
  – difference of means for two population
  – proportion for one population
  – difference of proportions for two populations
• carry out an appropriate method for a significance test involving any of the following:
  – mean for one population
  – difference of means for two populations
  – proportion for one population
  – difference of proportions for two populations
• used a “matched pairs” design when relevant
• determine a sample size to produce a given margin of error at a given confidence level for a proportion
• use inference results to state a conclusion in real-world terms
• identify sources of potential bias in a study design