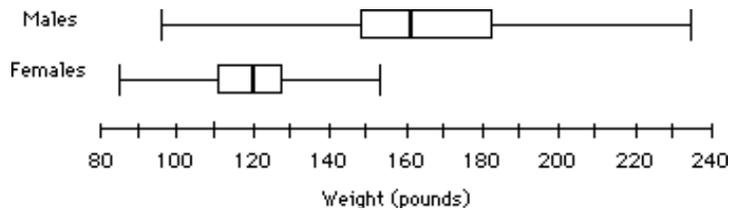


RenR 480 –Sample Questions for Final Exam

Here are a range of questions that you might encounter at the final exam. I would consider Questions 2, 3 & 5 easy, questions 1, 6 & 7 intermediate, and questions 4 & 8 difficult. It is usually a good strategy to answer the easy and moderately difficult questions first. Then, use the remaining time to go back to the questions that require thinking.

1. Give the formula for the *standard error of the mean*, and say in plain language what this statistic means:

2. The weights of the male and female deer are summarized in the following boxplots:



Which of the following is NOT correct?

- a. About 50% of the male deer have weights between 150 and 185 lbs.
- b. About 25% of female deer have weights more than 130 lbs.
- c. The median weight of male deer is about 162 lbs.
- d. The mean weight of female deer is about 120 because of symmetry.
- e. The male deer have less variability than the female deer.

3. When you prepare a data table for statistical analysis (e.g. a t-test or regression analysis). What do rows represent?

4. The yield of a variety of wheat was measured in a replicated and randomized experiment, and yield was found to be approximately normally distributed. The 2nd and 98th percentile were 29 and 41 kg/ha, respectively. The standard deviation is approximately:

- a. 12
- b. 6
- c. 3
- d. 4
- e. 2

5. Fill in the missing words: “Statistical methods may be described as methods for drawing conclusions about _____ using _____ computed from _____.”

- a. statistics, samples, populations
- b. populations, parameters, samples
- c. statistics, parameters, samples
- d. parameters, statistics, populations
- e. populations, statistics, samples

6. Which of the following is NOT a necessary assumption underlying the use of the Analysis of Variance?

- a. The samples are independent and randomly selected.
- b. The populations from which samples are drawn are normally distributed.
- c. The variances of the populations from which samples are drawn are the same.
- d. The means of the populations are equal.
- e. all of the above

7. If you do not have normal distributions but equal variances, what non-parametric alternative exists for a one-way ANOVA with pairwise comparisons?

8. From past experience, a forest nursery manager knows that she sells approximately 100,000 lodgepole pine seedlings/year, but the amount varies from year to year with a standard deviation of 10,000 (normal distribution). She is willing to accept a 2.5% chance to run out of stock. How many seedlings should she grow approximately? (Tip: this is a one-tailed T-test for a single sample and you should be able to come up with the answer without calculations)

- a. 100,000
- b. 110,000
- c. 120,000
- d. 130,000
- e. 140,000