Homework 10- Due Friday, April 29

Do Problems 10.65, 10.70, 10.76, 10.79, 10.83, 10.89, 10.96, and the problem below.

In general, ignore the words Applet Exercise and compute the p-values in R. You can use the tables or R to compute RRs. You will also find R useful for computing sample means and variances.

Homework should be written neatly and clearly explained. If it requires more than one sheet, the sheets must be stapled. Include your name and id number in the top right corner of your homework.

Problem 1. Let $X_1, \ldots, X_{10}$ be a random sample from a normal distribution with unknown mean μ_X and variance σ_X^2, and let $Y_1, \ldots, Y_8$ be an independent random sample from a normal distribution with unknown mean μ_Y and variance σ_Y^2.

(a) What is the RR for the Hypothesis Test $H_0 : \sigma_X^2 = \sigma_Y^2$ against $H_a : \sigma_X^2 > \sigma_Y^2$?

(b) Simulate $X_1, \ldots, X_{10}$ and $Y_1, \ldots, Y_8$ with $\mu_X = 1$, $\sigma_X^2 = 9$, $\mu_Y = 2$, and $\sigma_Y^2 = 4$.

(c) What is the p-value of your simulation?