

Math 350 - Homework 11

Due 4/26/2010

- (Text, problem 1, page 241.) According to the Mendelian theory of genetics, a certain garden pea plant should produce white, pink, or red flowers, with respective probabilities $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$. To test this theory a sample of 564 peas was studied with the result that 141 produced white, 291 produced pink, and 132 produced red flowers. Approximate the p -value of this data set
 - by using the chi-square approximation, and
 - by using a simulation.
- (Text, problem 3, page 241.) Approximate the p -value of the hypothesis that the following 10 values are random numbers: 0.12, 0.18, 0.06, 0.33, 0.72, 0.83, 0.36, 0.27, 0.77, 0.74.
- (Text, problem 7, page 242.) Approximate the p -value of the test that the following data set comes from an exponentially distributed population: 122, 133, 106, 128, 135, 126.
- (Text, problem 9, page 242.) Generate the values of 10 independent exponential random variables each having mean 1. Then, based on the Kolmogorov-Smirnov test quantity, approximate the p -value of the test that the data do indeed come from an exponential distribution with mean 1.

As always, I plan to discuss some of these problems in class during the week. It will help a lot if you think about them beforehand.