Stat 579 Homework Set # 7

Consider an experiment on chlorophyll inheritance in maize. A genetic model predicts the ratio of green to yellow to be 3:1. In a sample of $n = 1103$ seedlings, $n_1 = 854$ were green, and $n_2 = 249$ were yellow.

1.
(a) Compute the statistic $X^2$ for testing the proposed model.
(b) Determine the upper 10th percentile for the reference distribution.
(c) Provide an interpretation of your result, stated in the context of the problem.
(d) What are the shortcomings of hypothesis testing as a measure of evidence?

2.
(a) Compute a 90% confidence interval for $\pi_1$.
(b) Provide an interpretation of your result, stated in the context of the problem.