Problem 1. (a) Simulate $\sum_{i=1}^{n} Y_i$ in problem 10.102, with $n = 100$ and $p = .55$ in R. Does your simulation lead to a rejection of $H_0 : p = p_0$, with $p_0 = .5$ at an $\alpha = .05$ level?

(b) Repeat the simulation in the previous part 1000 times. What proportion of the time was $H_0$ rejected? How is this proportion related to the power of the test?