Recitation 11
April 4, 2006

1. A number p is drawn from the interval $[0, 1]$ according to the uniform distribution, and then a sequence of independent Bernoulli trials is performed, each with success probability p. What is the mean and the variance of the number of successes in k trials?

2. Imagine that the number of people that enter a bar in a period of 15 minutes has a Poisson distribution with rate λ. Each person who comes in buys a drink. If there are N types of drinks, and each person is equally likely to choose any type of drink, independently of what anyone else chooses, find the expected number of different types of drinks the bartender will have to make.