Your Name:

Duration of the Quiz is 20 minutes. There are three problems, worth 20 points. Show all your work for full credit. Books, notes etc. are prohibited.

1. Suppose X is a binomial random variable with n = 10 and $p = \frac{2}{5}$. What is the expected value of 3X - 4?

2. Cars arrive at a toll both according to a Poisson process with mean 80 cars **per hour**. If the attendant makes a **one-minute** phone call, what is the probability that at least 1 car arrives during the call?

3. An urn contains five chips, two red and three white. Suppose that two are drawn out at random, without replacement. Let X denote the number of red chips in the sample. Find the pdf of X, E(X), $E(X^2)$, and Var(X).