This quiz covers material from section 8.4.

1. (4 points) Suppose that 20% of the University’s classrooms are in violation of the fire code. The fire marshall decides to randomly select 8 classrooms for inspection. What is the probability that
   a. (1 pt) none of the classrooms are in violation of the fire code?
   b. (1 pt) only one of the classrooms is in violation of the fire code?
   c. (2 pts) at least three of the classrooms are in violation of the fire code?

2. (2 points) Suppose that 70% of homeowners in a given township cut their lawns with push mowers (as opposed to riding mowers or professional lawn care). From a sample of 100 homeowners, what is the probability that exactly 75 of them cut their lawns with push mowers?

3. (2 points) 75% of students have experienced problems with crime on campus. From a sample of 10 students
   a. (1 pt) what is the probability that at least 8 of them have experienced crime-related problems on campus?
   b. (1 pt) what is the expected number of students who have experienced problems with crime on campus?