1. Suppose that 30% of the applicants for a certain industrial job possess advanced training in computer programming. Applicants are interviewed sequentially and are selected at random from the pool.
   a. Find the probability that the first applicant with advanced training is found on the fifth interview.
   b. Find the probability that no more than 6 applicants must be interviewed before one is found with advanced training.

2. An oil prospector will drill a succession of holes in a given area to find a productive well. The probability that he is successful on a given trial is .2
   a. What is the probability that the third hole drilled is the first to yield a productive well.
   b. If the prospector can afford to drill at most 10 wells, what is the probability that he will fail to find a productive well?
   c. Find the probability that he will find oil in the seventh hole drilled, given that he did not find oil in the first 4 holes drilled.