1. (Lecture 3) Patient and Impatient have a date to meet at the Creamery at 1:00 PM. They both are chronically late and will each arrive at some random time between 1:00 PM and 2:00 PM. Patient will wait 20 minutes before leaving and Impatient will wait only 10 minutes before leaving. What is the probability that they meet up for their date?

2. (Lecture 4) You want to find a date for tonight and there are three people you would like to ask. The probability that any one of the three people will accept your invitation is 0.7. You randomly select one of the three people and extend an invitation. If you are rejected, then you go to the second person and extend the invitation. If you are again rejected, then you pick a third and extend the invitation. What is the probability that someone will accept the invitation?

3. (Lecture 5) We have developed a protein disease test that we assume is correct 99% of the time. We draw samples from a population with a probability $p$ of having the protein condition for which we are testing. How rare of a disease (i.e. what is the lowest $p$) can we test for given that we want the following result: if a person tests positive for the disease, their probability of having the disease is 90%?