STAT 380

Problems: Assignment 1

1. page 15, number 4.
2. page 16, number 13.
3. page 17, number 14.
4. page 20, number 43.
5. page 83, number 12.
6. page 86, number 32.
7. Consider a population of 200 million people of whom 200 thousand have a certain condition. A test is available with the following properties. Assuming that a person has the condition the probability that the test detects the condition is 0.9. Assuming that a person does not have the condition the test detects (incorrectly) the condition with probability 0.001. A person is picked at random from the 200 million people and the test is administered.

   (a) What is the chance that the test detects the condition for this randomly selected person?

   (b) Assuming that the condition is detected by the test for this randomly selected person what is the chance that the person has the condition?

   (c) A mandatory testing program is contemplated. If all 200 million are tested about how many positive results should be expected? Of these about how many will not have the condition?