Homework #2

For a problem that asks you to use R, include a copy of the code and output.

1. A certain circuit board consists of two resistors, green and red. The circuit board manufacturer has two huge bins filled with the resistors, one for each color. Based on several years of data, it is known that 90% of the red resistors are functional, and 75% of the green resistors are functional. When creating a circuit board, the technician selects one red and one green resistor at random.

   (a) The circuit board as a whole is only functional if both resistors are functional. What is the probability that the circuit board is functional?
   (b) What is the probability that exactly one of the resistors chosen is functional?

2. In a population of fruit flies, 30% are black and 70% are gray. Two flies are randomly chosen, with the two choices independent of one another. Find the probability the two chosen flies have the same color. (Hint: Articulate all the possible color combinations for the two flies.)