Solve each of the following. Show work (when possible)!!! Attach separate paper if necessary.
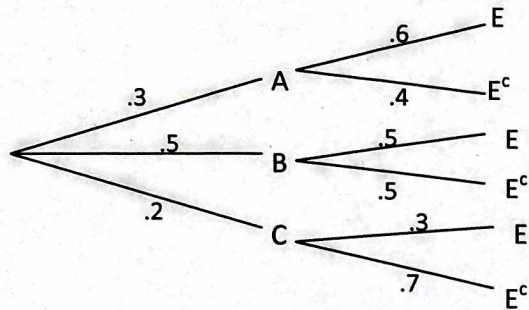
Lesson 7.4

1. Two cards are selected at random without replacement from a well-shuffled standard 52-card deck.
    A. Find the probability that both cards are red.

    B. Find the probability that at least one of the cards is black.

2. A jar contains six red, five yellow, and four green candies.
    a)   If one candy is selected at random, what is the probability that it is yellow?

    b)   If two are selected without replacement, what is the probability that both are red?

    c)   If three are selected without replacement, what is the probability that two are red?

    d)   If three are selected without replacement, what is the probability that at least one is green?

3. In a group of 20 ballpoint pens on a shelf in a department store, 2 are known to be defective. If a customer selects 3 of these pens, what is the probability that
    a)   At least 1 is defective?

    b)   No more than 1 is defective?

Lesson 7.5

4. Of 320 male and 280 female employees at a company, 160 of the men and 190 of the women are on flex-time (flexible working hours). An employee is selected at random.
    a)   Find the probability that a female employee is on flex time.

    b)   Find the probability that an employee is a male, given that they are not on flex time.

5. Let E and F be two events and suppose P(E) = .35, P(F) = .55, and P(E ∪ F) = .7.

   a) Find P(E ∩ F).

   b) Find P (E| F).

6. Use the tree diagram to find the given probabilities.

   a) P(A ∩ E)

   b) P(E| A)

   c) P(E)

   d) P(Eᶜ)

Lesson 7.6

7. For question 6 above, find P(B| E).

8. Bill commutes to work. He takes the train 3/5 of the time and drives 2/5 of the time. If he takes the train, he gets home by 6:30 pm 85% of the time. If he drives, then he gets home by 6:30 pm 60% of the time. If Bill gets home by 6:30 pm, what is the probability that he drove to work?