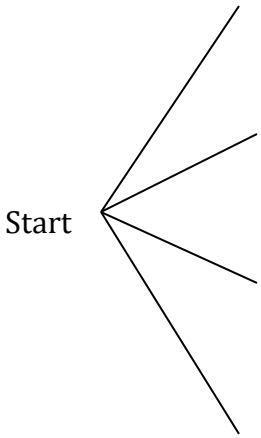
1. Melissa is designing a birthday card for her sister. She has a blue, a yellow, a pink, and a green sheet of paper. She also has a black, a red, and a purple marker. Suppose Melissa chooses one sheet of paper and one marker at random.

   a. Make a tree diagram to find all the possible color combinations.



   b. What is the probability that Melissa chooses pink paper and a red marker?

$$P(pink, red) =$$

   c. What is the probability that Melissa chooses blue paper? What is the probability she does not choose blue paper?

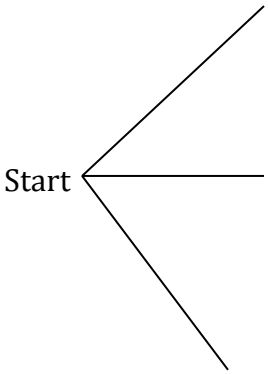
$$P(blue) = \qquad P(not\ blue) =$$

   d. What is the probability that she chooses a purple marker?

$$P(purple\ marker) =$$

2. Lunch at school consists of a sandwich, a vegetable, and a fruit. Each lunch combination is equally likely to be given to a student. The students do not know what lunch they will get. Sol's favorite lunch is a chicken sandwich, carrots, and a banana.

a. Make a tree diagram to determine how many different lunches are possible. List all the possible outcomes.



b. What is the probability that Sol gets his favorite lunch? Explain your reasoning.

c. What is the probability that Sol gets at least one of his favorite lunch items? Explain.