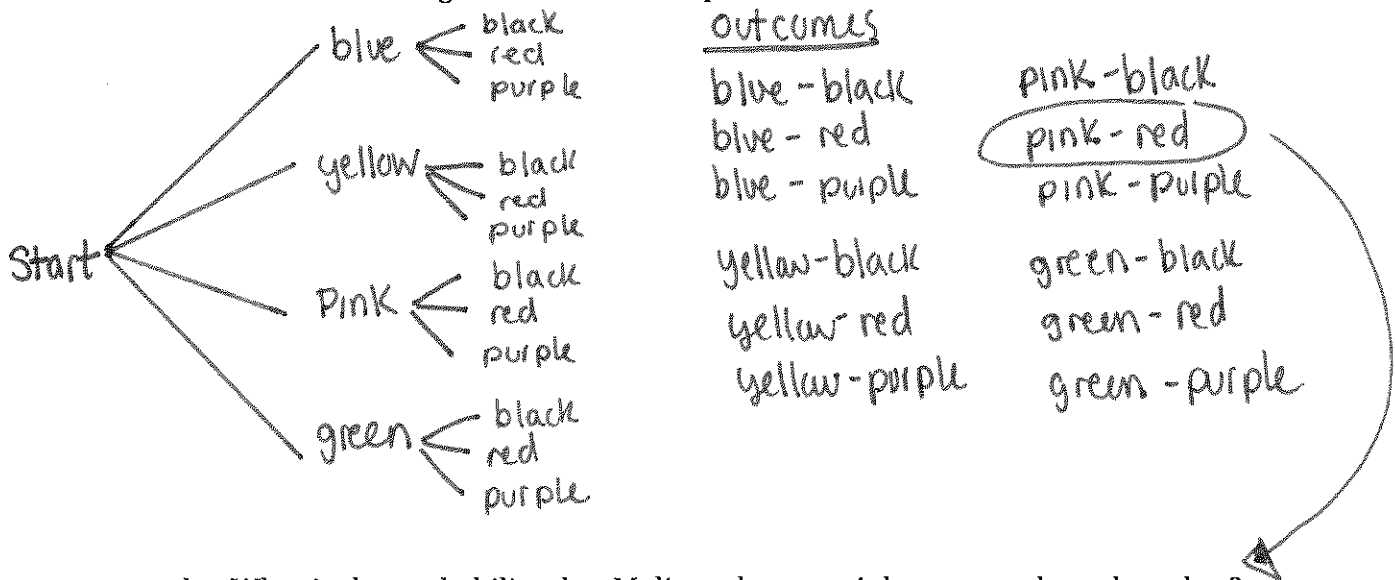


Hwk #7 – Tree Diagrams

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?

$$P(\text{pink, red}) = \frac{1}{12}$$

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

$$P(\text{blue}) = \frac{1}{4}$$

$$P(\text{not blue}) = \frac{3}{4}$$

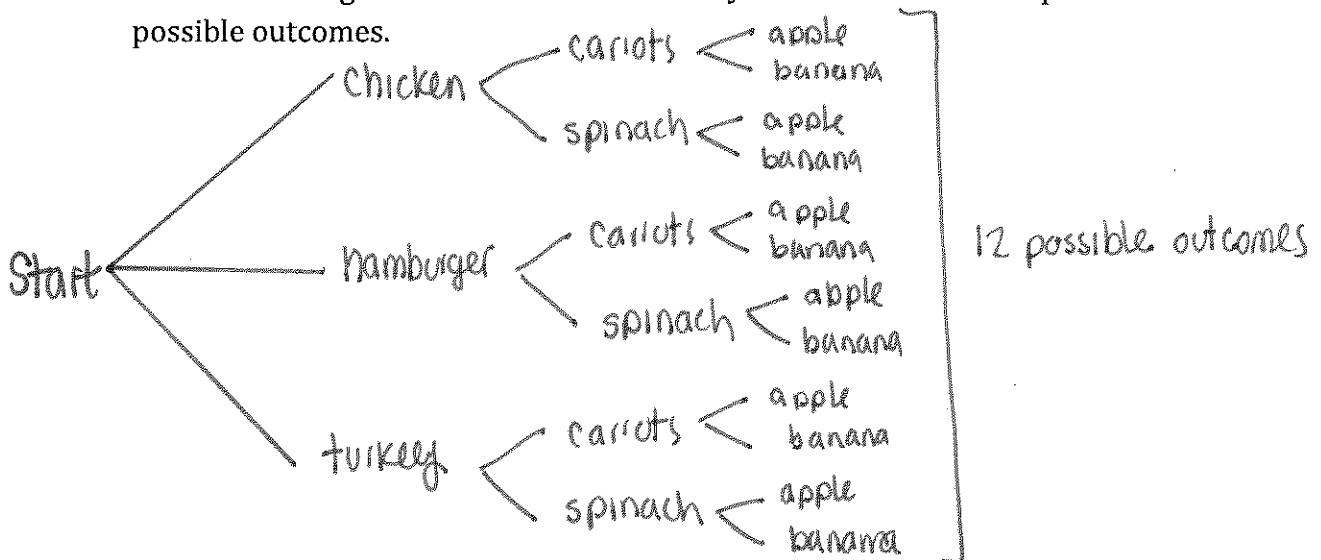
d. What is the probability that she chooses a purple marker?

$$P(\text{purple marker}) = \frac{4}{12} = \frac{1}{3}$$

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.

School Lunch Menu		
<u>Sandwiches</u>	<u>Vegetables</u>	<u>Fruit</u>
Chicken	Carrots	Apple
Hamburger	Spinach	Banana
Turkey		

- 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.

$$P(\text{Chicken} - \text{carrots} - \text{banana}) = \frac{1}{12}$$

- c. What is the probability that Sol gets at least one of his favorite lunch items? Explain.
(Hint: count the # of chicken, carrots & banana)

The probability of Sol getting at least one of his favorite items is $\frac{10}{12}$ or $\frac{5}{6}$.