

Gloria and Jenny each have only one O left on their game board. Gloria's O is at 6, and Jenny's is at 8. Which student is more likely to win on the next roll? Explain.

Both of them;  
Gloria & Jenny  
have a  $\frac{5}{36}$  chance.

- }. Now go back and analyze the game of rock-paper-scissors using a probability table to determine the possible outcomes.
- Make a probability table and use it to find the probability of Player A's winning and the probability of Player B's winning. Did you get the same answers as before?
  - Do the probabilities for Player A's winning and Player B's winning add up to 1 (or 100%)? If not, why not? No. There is a  $\frac{1}{3}$  probability of the game resulting in a tie.

Player A

	Rock	Paper	Scissors
R	Tie	A	B
P	B	Tie	A
S	A	B	Tie

Player B

(P) A =  $\frac{1}{3}$

(P) B =  $\frac{1}{3}$

(P) Tie =  $\frac{1}{3}$

's job at Crazy Creations Ice Cream Shop is to design new ice cream flavors. The company has just received some new ingredients and Scott wants to be sure to try all of the possible combinations. He needs to choose one item from each category to create the new flavor.



CSA      CSB

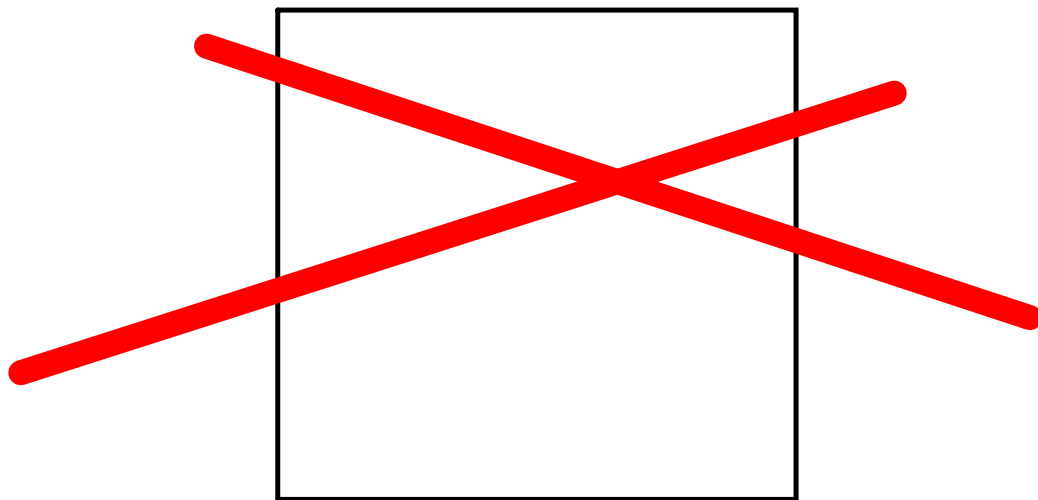
Base Flavor	Chunky Mix-In	Fruit Swirl
Vanilla Chocolate	Hazelnuts Sprinkles Toffee bits	Apricot Plum Berry Grape

Handwritten green notes: 'M' next to Hazelnuts, '4' next to Sprinkles, '5' next to Toffee bits, and '2 1/2' written vertically below the table.

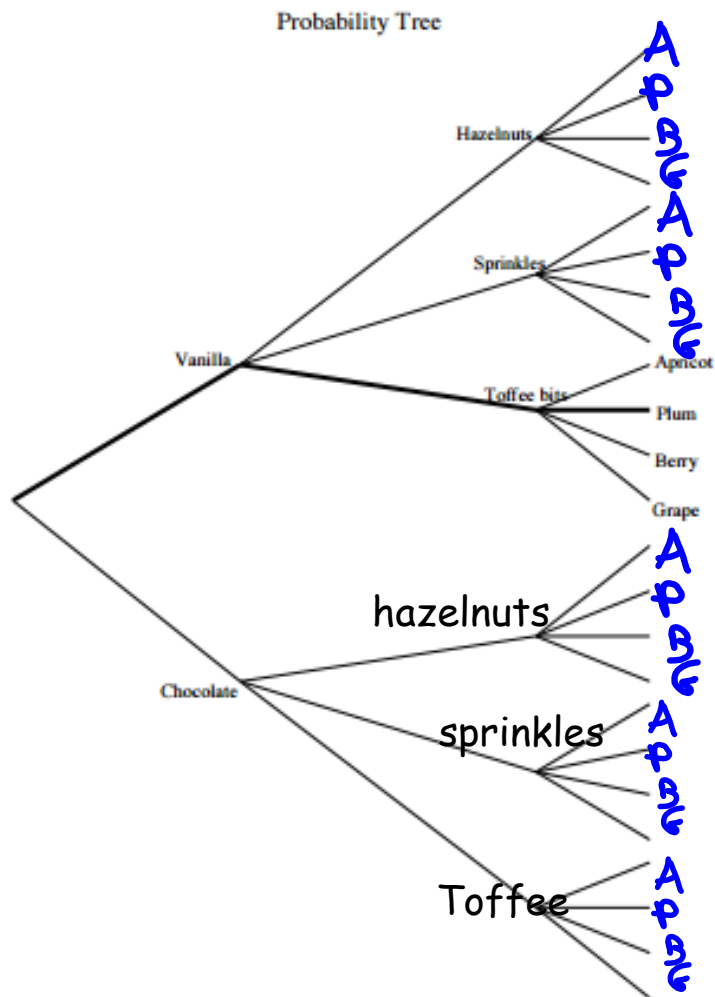
- a. Without talking with your teammates, list three different combinations Scott could try. ~~Make sure you use the word "and."~~ Then share your combinations with your study team. How many different combinations did you find? Do you think you found all of the possibilities?

### Probability Table

Won't work since three categories.



Lesson 5.2.5 Resource Page



- c. How many different flavor combinations are possible? Where do you look on the diagram to count the number of complete combinations?
- d. Use your probability tree to help you find the probability that Scott's final combination will include plum swirl.
- e. What is the probability that his final combination will include hazelnuts?

Scott's sister loves hazelnuts and Scott's little brother loves grape.

- a. Recall that events are favorable outcomes. ~~List all of the outcomes in Scott's sister's event. List all the outcomes in Scott's little brother's event.~~
- b. Two events are **mutually exclusive** if they have no outcomes in common. Do Scott's sister and little brother have mutually exclusive events? No.
- c. What would two mutually exclusive events in the Crazy Creations Ice-Cream Shop be? Sprinkles and hazelnuts

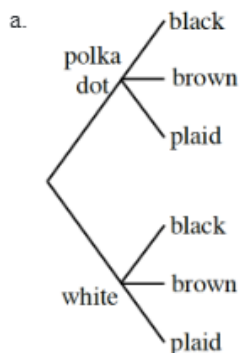
8. In a power outage, Rona has to reach into her closet in the dark to get dressed. She is going to find one shirt and one pair of pants. She has three different pairs of pants hanging there: one black, one brown, and one plaid. She also has two different shirts: one white and one polka dot.



- a. Draw a probability tree to organize the different outfit combinations Rona might choose. See below.
- b. What is the probability that she will wear *both* a polka dot shirt *and* plaid pants?  $1/6$
- c. What is the probability that she will not wear the black pants?  $4/6$
- d. For what kinds of problems can you also make a probability table? If it is possible, make a probability table for Rona's outfits. Which way of representing the outcomes do you like better?

When there are exactly two events that occur at the same time. See table below.

- e. Are the events polka dot and plaid mutually exclusive? Explain.
  - 1. No. You could wear plaid pants and a polka dot shirt.
- f. Are the events polka dot and white mutually exclusive? Explain.
  - Yes, because you could not wear a polka dot shirt and a white shirt at the same time.



	polka dot	white
black	pd/bl	wh/bl
brown	pd/br	wh/br
plaid	pd/pl	wh/pl