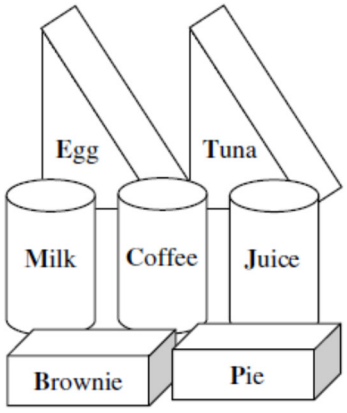
Name: _____ Date: _____

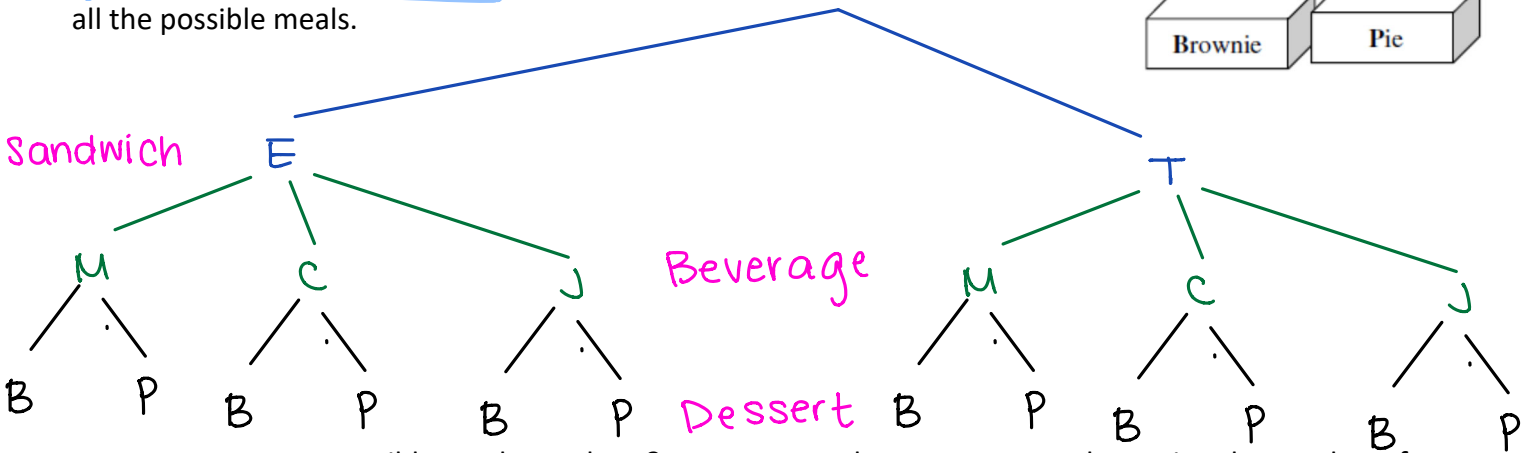
Learning Goal 9.1	I can calculate probabilities.

Example You are in line at the coffee shop and the current offerings are as follows:

Sandwich	Egg (E)		Tuna (T)
Beverage	Milk (M)	Coffee (C)	Juice (J)
Dessert	Brownie (B)		Pie (P)



If you must choose one option from each category, use a tree diagram to list all the possible meals.



a. How many possible meals are there?

12 meal choices

What if you didn't have to have one of each?

3 × 4 × 3 = 36

b. How can you determine the number of possible meals without listing all of them?

2 × 3 × 2 = 12

↑ sandwich ↑ beverage ↑ dessert

Suppose the coffee shop also features ice cream in 24 flavours. You can order regular, sugar, or waffle cones. Suppose you order a double cone with two scoops of ice cream.

a. How many choices are there for the cone?

3

b. How many choices are there for the first scoop?

24

c. How many choices are there for the second scoop?

24

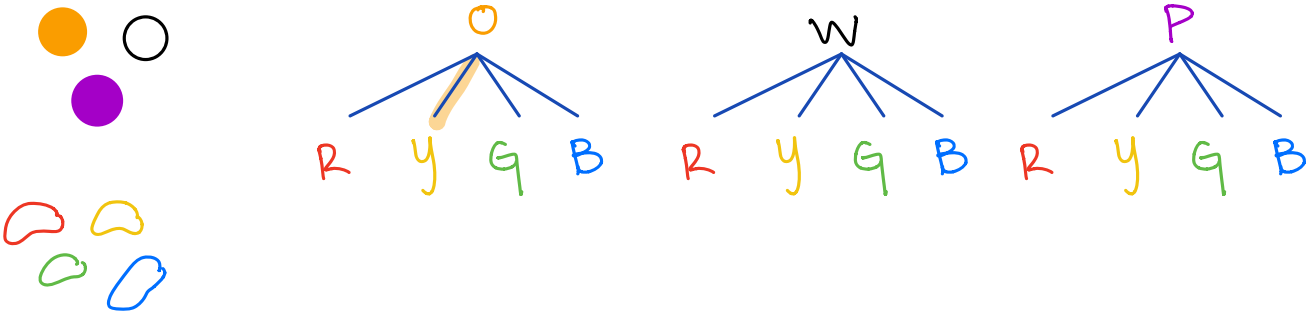
d. How many different double cones are possible?

n

3 × 24 × 24 = 1728 possibilities.

Example A marble is selected from a bag containing one orange marble, one white marble and one purple marble. A jellybean is chosen from a jar containing one red, one yellow, one green and one blue jellybean.

a. Use a ~~table~~ tree to list the sample space.



b. How many different possible outcomes are there? (leaves)

12

c. What is the probability of getting an orange marble and a yellow jellybean?

$$P(O, y) = \frac{1}{12}$$