

43

Possible Outcomes

SOL 6.20.a

Example

The menu for the pizza special at Luigi's is shown below. Luigi's is offering its customers one topping, one drink, and a choice of crusts.

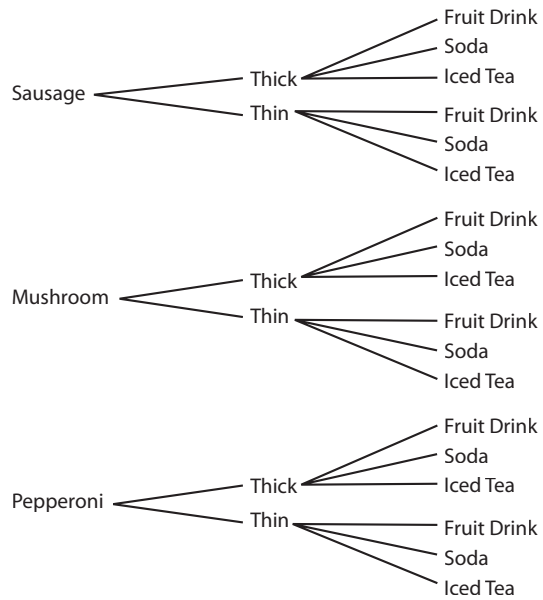
Luigi's Pizza Special		
Toppings	Crusts	Drink
Sausage	Thick	Fruit Drink
Mushroom	Thin	Soda
Pepperoni		Iced Tea

How many choices of one topping, one crust, and one drink does a customer have for the pizza special?

- A 8
- B 15
- C 16
- D 18**

Thinking It Through

Solve —*List It* Make a tree diagram:



18 ways to order one topping, one crust, and one drink, *answer D*.

Assemble You could also use the Fundamental Counting Principle to find or check the answer. Multiply the possible outcomes for *each* event: Toppings \times Crusts \times Drinks;
 $3 \times 2 \times 3 = 18$

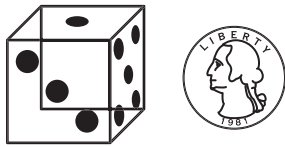
Review

- **Possible outcomes** are each of the ways that an experiment can result. The total number of possible outcomes is called a **sample space**. Two or more of the possible outcomes can have the same result. For example, there is more than one way to toss a sum of 7 with two number cubes.
- A **tree diagram** can be used to show the possible outcomes for an event that has two or more stages. You can also make an organized list to show the possible outcomes.
- Another way to find the number of possible outcomes is to use the **Fundamental Counting Principle**. Multiply the number of outcomes of *each* event: 3 toppings \times 2 crusts \times 3 drinks = 18.

Possible Outcomes

DIRECTIONS Read and solve each question. Then circle the letter of the best answer.

- 1 Linda is going to toss a number cube and a coin.



How many possible outcomes are there?

- A 2
- B 8
- C 12
- D 24



Making a tree diagram can help you visualize the sample space.

- 2 Darby is choosing from 4 pairs of pants and 5 tops to wear to a party. How many possible outfits of one pair of pants and one top does she have to choose from?

- F 9
- G 15
- H 18
- J 20

- 3 Miranda is going to toss three coins. Which shows all of the possible outcomes?

- A Heads, Heads, Heads
Heads, Heads, Tails
Heads, Tails, Tails
Tails, Tails, Tails
- B Heads, Heads, Heads
Heads, Heads, Tails
Heads, Tails, Heads
Heads, Tails, Tails
Tails, Heads, Heads
Tails, Heads, Tails
Tails, Tails, Heads
Tails, Tails, Tails
- C Heads, Heads, Heads
Heads, Heads, Tails
Heads, Tails, Heads
Tails, Tails, Heads
Tails, Heads, Tails
Tails, Tails, Tails
- D Heads, Heads, Heads
Heads, Heads, Tails
Heads, Tails, Tails
Tails, Tails, Heads
Tails, Heads, Tails
Tails, Tails, Tails

- 4 How many possible outcomes are there for tossing two number cubes?

- F 12
- G 24
- H 36
- J 66