

Lesson 9-3

Example 1 Use the Fundamental Counting Principle

CLOTHING Sophie is trying to put an outfit together. She can choose from red, green, purple, orange, and yellow blouses; black, blue, and beige skirts; and brown, black, blue, white, beige, and red shoes. How many different outfits are possible?

$$\begin{array}{ccccccc} \text{colors of} & & \text{colors of} & & \text{colors of} & & \text{total number} \\ \underbrace{\text{blouses}} & & \underbrace{\text{skirts}} & & \underbrace{\text{shoes}} & & \underbrace{\text{of outfits}} \\ 5 & \cdot & 3 & \cdot & 6 & = & 90 \end{array}$$

Sophie has 90 different outfits from which to choose.

Example 2 Use the Fundamental Counting Principle

PIZZA At the Hot Stuff Pizza Shop, there are three choices for a type of crust, two choices for a type of sauce, and nine choices of different toppings. Find the number of ways a one-topping pizza can be made.

To find the number of ways a one-topping pizza can be made, multiply the number of crust choices, the number of sauce choices, and the number of topping choices.

$$\begin{array}{ccccccc} \text{number of crust choices} & \cdot & \text{number of sauce choices} & \cdot & \text{number of topping choices} & & \\ 3 & \cdot & 2 & \cdot & 9 & = & 54 \end{array}$$

There are 54 different ways of creating a one-topping pizza.