

11.4 Dependents Events Day 2

Lesson Objectives

- Understand dependent events.
- Use the rules of probability to solve problems with dependent events.

Example 10 Solve a probability problem involving dependent events without replacement.

A jar contains 8 green marbles and 4 red marbles. Two marbles are randomly drawn, one at a time without replacement.

- Find the probability of drawing a green marble followed by a red marble.
- Find the probability of randomly drawing a red marble followed by a green marble.
- Find the probability of randomly drawing 2 green marbles.
- Find the probability of randomly drawing 2 red marbles.

Guided Practice

Solve. Show your work.

- 2** There are 16 colored pebbles in a jar. 11 of them are blue and the rest are orange. Two pebbles are randomly selected from the jar, one at a time without replacement.

a) Find the probability of taking an orange pebble followed by a blue pebble.

b) Find the probability of taking two orange pebbles.

$$P(O, O) = P(O) \cdot P(O \text{ after } O)$$

$$= \frac{?}{?} \cdot \frac{?}{?}$$

$$= \frac{?}{?}$$

The probability of randomly taking two orange pebbles is ?.

c) Find the probability of taking two blue pebbles.

$$P(B, B) = P(B) \cdot P(B \text{ after } B)$$

$$= \frac{?}{?} \cdot \frac{?}{?}$$

$$= \frac{?}{?}$$

The probability of randomly taking two blue pebbles is ?.