

Lesson 10-1

Example 1

Find each probability. Use the spinner.

- a. $P(7)$ b. $P(\text{green})$
c. $P(\text{black})$ d. $P(\text{less than } 10)$



Solution

- a. The favorable outcome is the one section labeled 7.

$$P(7) = \frac{1}{8} \quad \text{one favorable outcome} \\ \text{eight possible outcomes}$$

- b. Two of the eight sections are green.

$$P(\text{green}) = \frac{2}{8} = \frac{1}{4}$$

- c. None of the eight sections is black, so there are no favorable outcomes.

$$P(\text{black}) = \frac{0}{8} = 0 \quad \text{The probability of any impossible event is 0.}$$

- d. All the outcomes are favorable.

$$P(\text{less than } 10) = \frac{8}{8} = 1 \quad \text{The probability of a certain event is 1.}$$

Example 2

A bag contains 5 white, 4 black, 6 blue, 7 red, and 2 yellow marbles. Give you answers as percents rounded to the nearest tenth if necessary.

a. $P(\text{black or yellow})$

b. $P(\text{not red})$

Solution

- a. Find the total number of marbles.

$$5 + 4 + 6 + 7 + 2 = 24$$

Add to find the number of black or yellow marbles.

$$4 + 2 = 6$$

$$P(\text{black or yellow}) = \frac{6}{24}$$

$$6 \div 24 = 0.25 = 25\%$$

- b. Subtract to find the number of not red marbles.

$$24 - 7 = 17$$

$$P(\text{not red}) = \frac{17}{24}$$

$$17 \div 24 \approx 0.708 \text{ or } 70.8\%$$

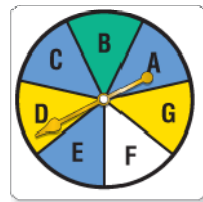
Example 3

Find the odds in favor of each event by using the spinner.

a. E

b. blue

c. not yellow

**Solution**

There are 7 possible outcomes.

a. The odds in favor of E = $\frac{1 \text{ E section}}{6 \text{ non-E sections}} = \frac{1}{6}$, or 1 to 6.

b. Three sections are blue. The odds in favor of blue = $\frac{3}{4}$ or 3 to 4.

c. Five sections are not yellow. The odds in favor of not yellow = $\frac{5}{2}$ or 5 to 2.