

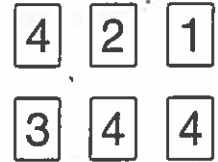
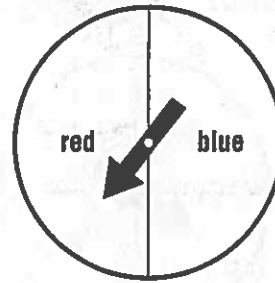
**11-5**

**Study Guide and Intervention**

**Probability of Independent Events**

If the outcome of one event does not affect the outcome of a second event, the two events are independent events. The probability of two independent events is found by multiplying the probability of the first event by the probability of the second event.

**EXAMPLE 1** A spinner is spun and a number card is chosen at random. What is the probability that red is spun and a 4 is chosen?



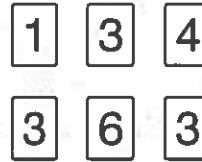
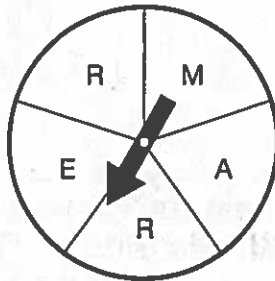
$$P(\text{red}) = \frac{1}{2} ; P(4) = \frac{3}{6} \text{ or } \frac{1}{2}$$

$$P(\text{red and } 4) = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

So, the probability is  $\frac{1}{4}$ , 0.25, or 25%.

**EXERCISES**

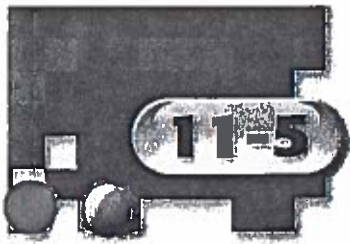
A spinner is spun and a number card is chosen at random. Find the probability of each event.



1.  $P(\text{M and } 3)$
2.  $P(\text{R and } 3)$
3.  $P(\text{consonant and odd})$
4.  $P(\text{consonant and } 3)$
5.  $P(\text{vowel and less than } 7)$
6.  $P(\text{vowel and even})$

A coin is tossed and a number cube is rolled. Find the probability of each event.

7.  $P(\text{tails and even})$
8.  $P(\text{heads and less than } 4)$
9.  $P(\text{heads and greater than } 2)$

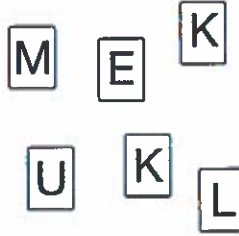
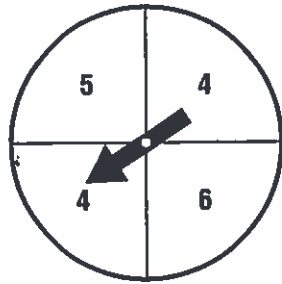


# Practice: Word Problems

## Probability of Independent Events

**GAMES** For Exercises 1–3, use the spinner and the letter cards and the following information.

Brad is playing a game with his little sister in which you spin the spinner and randomly choose a letter card. The spinner tells how many words you must name that begin with the letter on the letter card you choose.



1. What is the probability of spinning an even number and choosing a vowel?	2. What is the probability of spinning an even number and a consonant? Explain.
3. Find $P(\text{even and M})$ . What are the possible numbers of words beginning with M that Brad or his sister will have to name?	4. <b>WEATHER</b> The probability of snow on Monday is 0.2. The probability of snow on Tuesday is 0.4. What is the probability that it will snow on both days?
5. <b>GAMES</b> Stephen is playing a game with two coins. In order to score points, both coins must land on heads or both must land on tails. What is the probability that Stephen will score points on one toss?	6. <b>FOOD</b> A bakery sells muffins and beverages. The beverages are coffee, tea, orange juice, and milk. There are five kinds of muffins. If a customer chose a beverage and a muffin at random, what is the probability the customer would choose a milk and a blueberry muffin?