

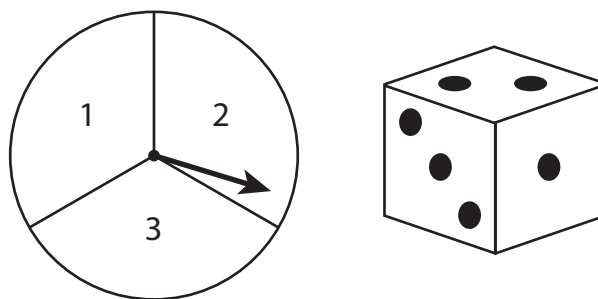
**UNIT 4 • APPLICATIONS OF PROBABILITY****Lesson 1: Events****Practice 4.1.2: The Addition Rule**

Use what you have learned about probability to solve the following problems.

1. Nasir tosses a coin 3 times. What is the probability that he gets at least 2 tails? Write your answer as a fraction, as a decimal, and as a percent.

Use the following diagram and information to complete problems 2 and 3.

Bianca is playing a board game. She spins the spinner and rolls a standard 6-sided die. Let  $s$  be the spinner result and let  $d$  be the die result.



2. What is the probability that  $s + d > 3$  and  $s \cdot d > 3$ ?
3. What is the probability that  $s + d > 5$  or  $s \cdot d < 10$ ?
4. Consuela is playing a card game with a standard 52-card deck. She wants a king or a diamond on her first draw. What is the probability that she gets a king or a diamond on her first draw?

Ladarius is playing a board game. To find the number of spaces to move, he rolls a pair of dice. Use this information to complete problems 5 and 6.

5. What is the probability that Ladarius rolls doubles or a sum of 7? Write your answer as a fraction, as a decimal, and as a percent.
6. What is the probability that Ladarius rolls a sum that is less than 4 or greater than 5?

**continued**

**UNIT 4 • APPLICATIONS OF PROBABILITY****Lesson 1: Events**

Middletown High School has 240 students in the tenth grade. Use this information to complete problems 7 and 8.

- The only tenth grade math courses are algebra and geometry. All the tenth grade students are taking at least one math course. There are 142 taking algebra and 120 taking geometry. What is the probability that a randomly chosen tenth grader is taking both algebra and geometry?
- The only tenth grade music courses are vocal and instrumental. There are 89 tenth grade students taking at least one music course. There are 51 taking vocal and 58 taking instrumental. What is the probability that a randomly chosen tenth grader is taking both vocal and instrumental music?

Use the information to complete problems 9 and 10.

The table below lists the first name and date of birth for five students. The information is presented in letters (for the names) and digits (for the birth dates). The total characters for any given student is made up of both letters and digits in their data. The characters of the names are not case sensitive. For example, Trent's characters are t, r, e, n, t, 8, 1, 2, 9, and 7.

Trent	8-12-97
Ramiro	6-15-98
Mara	10-9-98
Pam	2-12-98
Fina	7-15-97

- If a student is chosen at random from the group, what is the probability that the choice will contain a repeated letter or a repeated digit?
- If a student is chosen at random from the group, what is the probability that the choice will contain more than 10 characters and a digit sum greater than 20?