11-3 **Practice** Form G
Probability of Multiple Events

Classify each pair of events as *dependent* or *independent*.

1. A member of the junior class is selected; one of her pets is selected. **dependent**

2. A member of the junior class is selected as junior class president; a freshman is selected as freshman class president. **independent**

3. An odd-numbered problem is assigned for homework; an even-numbered problem is picked for a test. **independent**

4. The sum of two rolls of a number cube is 6; the product of the same two rolls is 8. **dependent**

***Q* and *R* are independent events. Find *P*(*Q* and *R*).**

5. $P(Q) = \frac{1}{8}, P(R) = \frac{2}{5}$ **$\frac{1}{20}$**

6. $P(Q) = 0.8, P(R) = 0.2$ **0.16**

7. $P(Q) = \frac{1}{4}, P(R) = \frac{1}{5}$ **$\frac{1}{20}$**

8. $P(Q) = \frac{3}{4}, P(R) = \frac{2}{3}$ **$\frac{1}{2}$**

9. Suppose you have seven CDs in a box. Four are rock, one is jazz, and two are country. Today you choose one CD without looking, play it, and put it back in the box. Tomorrow, you do the same thing. What is the probability that you choose a country CD both days? **$\frac{4}{49}$**

You randomly select an integer from 1 to 100. State whether the events are mutually exclusive. Explain your reasoning.

10. The integer is less than 40; the integer is greater than 50.
Yes; all integers 1–39 are less than 50.

11. The integer is odd; the integer is a multiple of 4.
Yes; all multiples of 4 are even.

12. The integer is less than 50; the integer is greater than 40.
No; the integers 41–49 are less than 50 and greater than 40.

***M* and *N* are mutually exclusive events. Find *P*(*M* or *N*).**

13. $P(M) = \frac{3}{4}, P(N) = \frac{1}{6}$ **$\frac{11}{12}$**

14. $P(M) = 10\%, P(N) = 45\%$ **55%**

15. $P(M) = 20\%, P(N) = 18\%$ **38%**

16. $P(M) = \frac{1}{10}, P(N) = \frac{3}{5}$ **$\frac{7}{10}$**

# 11-3 Practice (continued) Form G

Probability of Multiple Events

17. Exactly 62% of the students in your school are under 17 years old. In addition, 4% of the students are over 18. What is the probability that a student chosen at random is under 17 or over 18? **66%**

A fair number cube is tossed. Find each probability.

18. P(even or 3) $\dfrac{2}{3}$

19. P(less than 2 or even) $\dfrac{2}{3}$

20. P(prime or 4) $\dfrac{2}{3}$

21. You randomly choose a natural number from 1 to 10. What is the probability that you choose a multiple of 2 or 3? $\dfrac{7}{10}$

The graph at the right shows the types of bicycles in a bicycle rack. Find each probability.

Bicycles at Your School

22. A bicycle is a 1-speed. **11%**

23. A bicycle is a 3-speed or a 5-speed. **70%**

24. A bicycle is not a 10-speed. **86%**

25. A bicycle is not a 1-, 3-, or 10-speed. **47%**
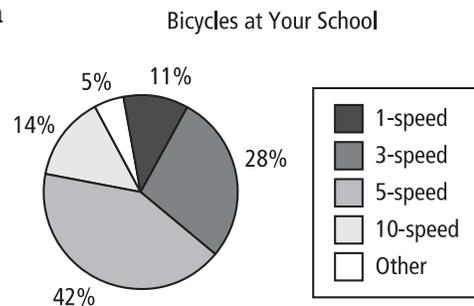
You have a drawer with five pairs of white socks, three pairs of black socks, and one pair of red socks. You choose one pair of socks at random each morning, starting on Monday. You do not put the socks you choose back in the drawer. Find the probability of each event.

26. You select black socks on Monday and white socks on Tuesday. $\dfrac{5}{24}$

27. You select red socks on Monday and black socks on Tuesday. $\dfrac{1}{24}$

28. You select white socks on Monday and Tuesday. $\dfrac{5}{18}$

29. You select red socks on Monday. $\dfrac{1}{9}$

30. Only 93% of the airplane parts being examined pass inspection. What is the probability that all of the next 5 parts examined will pass inspection? **≈ 69.6%**