10.4 EXERCISES

HOMEWORK KEY

= **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 11, 21, and 45

= **TAKS PRACTICE AND REASONING** Exs. 15, 34, 39, 40, 44, 47, 51, and 52

SKILL PRACTICE

1. **VOCABULARY** Copy and complete: The union or intersection of two events is called a(n) ? .

2. **WRITING** Are the events A and $\overline{A}$ disjoint? *Explain*. Then give an example of a real-life event and its complement.

EXAMPLE 1 on p. 707 for Exs. 3–8

DISJOINT EVENTS **Events A and B are disjoint. Find $P(A \text{ or } B)$.**

3. $P(A) = 0.3$, $P(B) = 0.1$

4. $P(A) = 0.55$, $P(B) = 0.2$

5. $P(A) = 0.41$, $P(B) = 0.24$

6. $P(A) = \frac{2}{5}$, $P(B) = \frac{3}{5}$

7. $P(A) = \frac{1}{3}$, $P(B) = \frac{1}{4}$

8. $P(A) = \frac{2}{3}$, $P(B) = \frac{1}{5}$

EXAMPLES 2 and 3 on p. 708 for Exs. 9–15

OVERLAPPING EVENTS **Find the indicated probability.**

9. $P(A) = 0.5$, $P(B) = 0.35$
$P(A \text{ and } B) = 0.2$
$P(A \text{ or } B) =$?

10. $P(A) = 0.6$, $P(B) = 0.2$
$P(A \text{ or } B) = 0.7$
$P(A \text{ and } B) =$?

11. $P(A) = 0.28$, $P(B) = 0.64$
$P(A \text{ or } B) = 0.71$
$P(A \text{ and } B) =$?

12. $P(A) = 0.46$, $P(B) = 0.37$
$P(A \text{ and } B) = 0.31$
$P(A \text{ or } B) =$?

13. $P(A) = \frac{2}{7}$, $P(B) = \frac{4}{7}$
$P(A \text{ and } B) = \frac{1}{7}$
$P(A \text{ or } B) =$?

14. $P(A) = \frac{6}{11}$, $P(B) = \frac{3}{11}$
$P(A \text{ or } B) = \frac{7}{11}$
$P(A \text{ and } B) =$?

15. **TAKS REASONING** What is $P(A \text{ or } B)$ if $P(A) = 0.41$, $P(B) = 0.53$, and $P(A \text{ and } B) = 0.27$?

(A) 0.12 (B) 0.67 (C) 0.80 (D) 0.94

EXAMPLE 4 on p. 709 for Exs. 16–19

FINDING PROBABILITIES OF COMPLEMENTS **Find $P(\overline{A})$.**

16. $P(A) = 0.5$

17. $P(A) = 0$

18. $P(A) = \frac{1}{3}$

19. $P(A) = \frac{5}{8}$

CHOOSING CARDS **A card is randomly selected from a standard deck of 52 cards. Find the probability of drawing the given card.**

20. A king *and* a diamond

21. A king *or* a diamond

22. A spade *or* a club

23. A 4 *or* a 5

24. A 6 *and* a face card

25. *Not* a heart

ERROR ANALYSIS ***Describe*** **and correct the error in finding the probability of randomly drawing the given card from a standard deck of 52 cards.**

26.

P(heart or face card)

$= P(\text{heart}) + P(\text{face card})$

$= \frac{13}{52} + \frac{12}{52}$

$= \frac{25}{52}$

27.

P(club or 9)

$= P(\text{club}) + P(9) + P(\text{club and } 9)$

$= \frac{13}{52} + \frac{4}{52} + \frac{1}{52}$

$= \frac{9}{26}$