4.6 EXERCISES

HOMEWORK KEY

◆ = **MULTIPLE CHOICE PRACTICE** Exs. 23, 28, 36, and 43–45

○ = **HINTS AND HOMEWORK HELP** for Exs. 9, 15, and 39 at classzone.com

SKILLS • PROBLEM SOLVING • REASONING

EXAMPLES 1, 2, and 3 on pp. 226–227 for Exs. 3–23

1. **VOCABULARY** Copy and complete: The inequalities $|x| > 8$ and $x > 8$ *or* $x < -8$ are ___?___.

2. **WRITING** *Describe* the difference between solving $|x| \leq 5$ and solving $|x| \geq 5$.

SOLVING INEQUALITIES **Solve the inequality. Graph your solution.**

3. $|x| < 4$
4. $|y| \geq 3$
5. $|h| > 4.5$
6. $|p| < 1.3$
7. $|t| \leq \frac{3}{5}$
8. $|j| \geq 1\frac{3}{4}$
9. $|d + 4| \geq 3$
10. $|b - 5| < 10$
11. $|14 - m| > 6$
12. $|2s - 7| < 1$
13. $|4c + 5| \geq 7$
14. $|9 - 4n| \leq 5$
15. $5\left|\frac{1}{2}r + 3\right| > 5$
16. $\left|\frac{4}{3}s - 7\right| - 8 > 3$
17. $-3\left|2 - \frac{5}{4}u\right| \leq -18$
18. $2|3w + 8| - 13 < -5$
19. $2\left|\frac{1}{4}v - 5\right| - 4 > 3$
20. $\frac{2}{7}|4f + 6| - 2 \geq 10$

ERROR ANALYSIS ***Describe*** **and correct the error in solving the inequality.**

21.
$$|x + 4| > 13$$
$$13 > x + 4 > -13$$
$$9 > x > -17$$

22.
$$|x - 5| < 20$$
$$x - 5 < 20$$
$$x < 25$$

23. ◆ **MULTIPLE CHOICE** What is the solution of the inequality $|x - 9| + 4 \geq 13$?

(A) $x \leq -8$ *or* $x \geq -6$ (B) $x \leq 0$ *or* $x \geq 18$

(C) $-8 \leq x \leq -6$ (D) $0 \leq x \leq 18$

TRANSLATING SENTENCES **Write the verbal sentence as an inequality. Then solve the inequality and graph your solution.**

24. The absolute deviation of x from 6 is less than or equal to 4.

25. The absolute deviation of $2x$ from -7 is greater than or equal to 15.

26. Three more than the absolute deviation of $-4x$ from 7 is greater than 10.

27. Four times the absolute deviation of x from 9 is less than 8.

28. ◆ **MULTIPLE CHOICE** Which inequality is equivalent to $x < 1$ *or* $x > 5$?

(A) $|x + 8| - 2 > 10$ (B) $3|6 - 2x| > 12$

(C) $|5x + 9| < 10$ (D) $|7 - 4x| - 9 < 8$