GUIDED PRACTICE for Examples 5 and 6

Solve the inequality. Then graph the solution.

10. $|x + 2| < 6$ **11.** $|2x + 1| \leq 9$ **12.** $|7 - x| \leq 4$

13. GYMNASTICS For Example 6, write an absolute value inequality describing the *unacceptable* mat thicknesses.

1.7 EXERCISES

HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 21, 47, and 77
- = **TAKS PRACTICE AND REASONING** Exs. 33, 40, 63, 64, 83, and 84
- = **MULTIPLE REPRESENTATIONS** Ex. 78

SKILL PRACTICE

1. VOCABULARY What is an extraneous solution of an equation?

2. WRITING The absolute value of a number cannot be negative. How, then, can the absolute value of x be $-x$ for certain values of x?

CHECKING SOLUTIONS **Decide whether the given number is a solution of the equation.**

3. $|b - 1| = 14; -13$ **4.** $|d + 6| = 10; -4$ **5.** $|32 - 6f| = 20; -2$

6. $|2m + 6| = 10; -8$ **7.** $|3n - 7| = 4; 1$ **8.** $|17 - 8r| = 15; 4$

EXAMPLE 1 on p. 51 for Exs. 9–20

SOLVING EQUATIONS **Solve the equation. Graph the solution.**

9. $|x| = 9$ **10.** $|y| = -5$ **11.** $|z| = 0$

12. $|f - 5| = 3$ **13.** $|g - 2| = 7$ **14.** $|h - 4| = 4$

15. $|k + 3| = 6$ **16.** $|m + 5| = 1$ **17.** $|n + 9| = 10$

18. $|6 - p| = 4$ **19.** $|5 - q| = 7$ **20.** $|-4 - r| = 4$

EXAMPLE 2 on p. 52 for Exs. 21–32

SOLVING EQUATIONS **Solve the equation.**

21. $|2d - 5| = 13$ **22.** $|3g + 14| = 7$ **23.** $|7h - 10| = 4$

24. $|3p - 6| = 21$ **25.** $|2q + 3| = 11$ **26.** $|4r + 7| = 43$

27. $|5 + 2j| = 9$ **28.** $|6 - 3k| = 21$ **29.** $|20 - 9m| = 7$

30. $\left|\frac{1}{4}x - 3\right| = 10$ **31.** $\left|\frac{1}{2}y + 4\right| = 6$ **32.** $\left|\frac{2}{3}z - 6\right| = 12$

33. TAKS RESPONSE The equation $|5x - 10| = 45$ in Example 2 has two solutions. Does the equation $|5x - 10| = -45$ also have two solutions? *Explain.*

EXAMPLE 3 on p. 52 for Exs. 34–42

EXTRANEOUS SOLUTIONS **Solve the equation. Check for extraneous solutions.**

34. $|3x - 4| = x$ **35.** $|x + 24| = -7x$ **36.** $|8x - 1| = 6x$

37. $|4x + 5| = 2x + 4$ **38.** $|9 - 2x| = 10 + 3x$ **39.** $|8 + 5x| = 7 - x$