

## Vocabulary and Core Concept Check

- VOCABULARY** What is an extraneous solution?
- WRITING** Without calculating, how do you know that the equation  $|4x - 7| = -1$  has no solution?

## Monitoring Progress and Modeling with Mathematics

In Exercises 3–10, simplify the expression.

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| 3. $ -9 $                         | 4. $- 15 $                          |
| 5. $ 14  -  -14 $                 | 6. $ -3  +  3 $                     |
| 7. $- -5 \cdot (-7) $             | 8. $ -0.8 \cdot 10 $                |
| 9. $\left  \frac{27}{-3} \right $ | 10. $\left  -\frac{-12}{4} \right $ |

In Exercises 11–24, solve the equation. Graph the solution(s), if possible. (See Examples 1 and 2.)

- |  |                                      |
|--|--------------------------------------|
| 11. $ w  = 6$                                    | 12. $ r  = -2$                       |
| 13. $ y  = -18$                                  | 14. $ x  = 13$                       |
| 15. $ m + 3  = 7$                                | 16. $ q - 8  = 14$                   |
| 17. $ -3d  = 15$                                 | 18. $\left  \frac{t}{2} \right  = 6$ |
| 19. $ 4b - 5  = 19$                              | 20. $ x - 1  + 5 = 2$                |
| 21. $-4 8 - 5n  = 13$                            |                                      |
| 22. $-3 \left  1 - \frac{2}{3}v \right  = -9$    |                                      |
| 23. $3 = -2 \left  \frac{1}{4}s - 5 \right  + 3$ |                                      |
| 24. $9 4p + 2  + 8 = 35$                         |                                      |

25. **WRITING EQUATIONS** The minimum distance from Earth to the Sun is 91.4 million miles. The maximum distance is 94.5 million miles. (See Example 3.)

- Represent these two distances on a number line.
- Write an absolute value equation that represents the minimum and maximum distances.

26. **WRITING EQUATIONS** The shoulder heights of the shortest and tallest miniature poodles are shown.



- Represent these two heights on a number line.
- Write an absolute value equation that represents these heights.

**USING STRUCTURE** In Exercises 27–30, match the absolute value equation with its graph without solving the equation.

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|-------------------|-------------------|
| 27. $ x + 2  = 4$ | 28. $ x - 4  = 2$ |
| 29. $ x - 2  = 4$ | 30. $ x + 4  = 2$ |

