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CHAPTER TEST

Graph the numbers on a number line.

1. $-2, -\frac{7}{4}, 6.5, \sqrt{30}, \frac{1}{3}$

2. $\frac{9}{2}, 0.8, -5.5, -\sqrt{10}, -\frac{3}{4}$

Use properties and definitions of operations to show that the statement is true. *Justify* each step.

3. $5 + (x - 5) = x$

4. $(3d + 7) - d + 5 = 2d + 12$

Evaluate the expression for the given values of x and y .

5. $4x - 6y$ when $x = 5$ and $y = -3$

6. $3x^2 - 9y$ when $x = 2$ and $y = 4$

Simplify the expression.

7. $5n + 10 - 8n + 6$

8. $10m - 4(3m + 7) + 6m$

9. $11 + q - 3q^2 + 18q^2 - 2$

10. $9t^2 + 14 - 17t + 6t - 8t^2$

11. $5(x - 3y) + 2(4y - x)$

12. $5(2u + 3w) - 2(5u - 7w)$

Solve the equation. Check your solution.

13. $5n + 11 = -9$

14. $6k + 7 = 4 + 12k$

15. $-t - 2 = 9(t - 8)$

Solve the equation for y . Then find the value of y for the given value of x .

16. $12x - 28y = 40; x = 6$

17. $x + 4y = 12; x = 2$

18. $15y + 2xy = -30; x = 5$

Solve the inequality. Then graph the solution.

19. $-5x - 6 < 19$

20. $x + 22 \geq -3x - 10$

21. $5 < 2x + 3 \leq 11$

Solve the equation. Check for extraneous solutions.

22. $|3d - 4| = 14$

23. $|f + 3| = 2f + 4$

24. $|10 - 7g| = 2g$

Solve the inequality. Then graph the solution.

25. $|x - 5| \leq 30$

26. $|3y + 4| > 2$

27. $|\frac{2}{3}z - 5| < 5$

28. **WIRELESS NETWORK** To set up a wireless network for Internet access at home, you buy a network router for \$75. The fee for DSL service is \$18 per month. Write an expression for the amount of money you spend in n months. How much money do you spend in 12 months?

29. **CAR REPAIR** The bill for the repair of a car was \$420. The cost of parts was \$240. The cost of labor was \$45 per hour. How many hours did the repair take?

30. **HOUSEHOLD CHORES** You can wash one window in 15 minutes and your sister can wash one window in 20 minutes. How many minutes will it take to wash 12 windows if you work together?

31. **GEOMETRY** The formula $V = \frac{1}{3}\pi r^2 h$ gives the volume V of a cone with height h and base radius r . Solve the formula for h . Then find h when $r = 2$ inches and $V = 45$ cubic inches.

