Identify the property that the statement illustrates. (Lesson 1.1)
1. $5 + (-5) = 0$
2. $3 + (6 + 4) = (3 + 6) + 4$
3. $0 + 9 = 9$

Use properties and definitions of operations to show that the statement is true. Justify each step. (Lesson 1.1)
4. $5 + (r - 5) = r$
5. $3 \cdot (2p + 6) - 6p = 18$

Evaluate the expression for the given value of the variable. (Lesson 1.2)
6. $3t + 8$ when $t = -2$
7. $b^3 + 2b - 5$ when $b = -1$

Simplify the expression. (Lesson 1.2)
8. $5w^2 - 3w^2 + w - 2w^2$
9. $3(2g + 4) - 2(3g - 3)$

Solve the equation. Check your solution. (Lesson 1.3)
10. $2q = \frac{5}{2}$
11. $3(2g - 1) = 15$
12. $3 = 1 - 2f$
13. $(z - 4) = 2z + 3$
14. $\frac{3}{2}n = n + 4$
15. $3 - 4h = 5 - 2h$

Solve the equation for $y$. Then find the value of $y$ for the given value of $x$. (Lesson 1.4)
16. $6xy = 12x; x = 1$
17. $4x + 3y = 0; x = -3$

Solve for the indicated variable. (Lesson 1.4)
18. $xy + z = y$ for $x$.
19. $(6m + 3n) = n^2$ for $m$.

Use the formula $A = lw$ for the area of a rectangle to solve for the missing variable. (Lesson 1.5)
20. $A = \_\_\_\_\_\_, l = 2$ meters, $w = 3$ meters
21. $A = 51$ mi$^2$, $l = \_\_\_\_\_, w = 3$ mi

22. Ocean Currents A bottle starts out 3 miles off shore, and each week is carried 2 miles further offshore than the previous week due to ocean currents. Write an expression for the distance $D$ of the bottle offshore after $w$ weeks. (Lesson 1.5)

Solve the inequality. (Lesson 1.6)
23. $x + 2 < 6$
24. $3(x - 2) \leq x - 12$
25. $5 \geq 2x - 5 \geq -5$
26. $x + 3 < 1$ or $x - 3 > 1$

Decide whether the given number is a solution of the equation. (Lesson 1.7)
27. $|2j + 3| = 9; j = -3$
28. $|r - 5| = 6; r = -1$

Solve the equation. (Lesson 1.7)
29. $|c + 3| = 2$
30. $|8 - 2p| = 6$
Tell whether the relation is a function.  \((Lesson \ 2.1)\)

31. \((-1, 3), (1, -3), (-2, 3), (2, -3)\)            32. \((-1, 3), (2, -6), (-1, 5), (4, -9)\)

Tell whether the function is linear. Then evaluate the function for the
given value of \(x\).  \((Lesson \ 2.1)\)

33. \(f(x) = \left| x \right| - 3; f(2)\)            34. \(f(x) = 1 - x^2; f(0)\)

Find the slope of the line passing through the given points. Then tell
whether the line rises, falls, is horizontal, or is vertical.  \((Lesson \ 2.2)\)

35. \((2, -4), (-1, 2)\)            36. \((-2, 2), (2, 4)\)

37. \((-4, -4), (4, -4)\)            38. \((2, -4), (2, 6)\)

Find the \(x\)- and \(y\)-intercepts of the line with the given equation.  \((Lesson \ 2.3)\)

39. \(2x - 6y = 12\)            40. \(3x + 2y = 1\)

Write an equation of the line that passes through the given point and
satisfies the given condition.  \((Lesson \ 2.4)\)

41. \((2, 3), m = 1\)            42. \((3, -1), m = 2\)

43. \((1, -3); \parallel y = 2x - 1\)            44. \((3, 2); \perp y = -3x\)

45. **Flooding** Water fills a flood plain that is 16 inches above sea level. Each day,
an additional 3 inches of water flood the land. Write an equation that gives the
height \(h\) of water in inches above sea level after \(d\) days.  \((Lesson \ 2.4)\)

The variables \(x\) and \(y\) vary directly. Write an equation that relates \(x\) and \(y\).
Then find \(y\) when \(x = 4\).  \((Lesson \ 2.5)\)

46. \(x = 3, y = 6\)            47. \(x = 12, y = 3\)

48. Tell whether the data in the table show direct variation. If so, write an equation
relating \(x\) and \(y\).  \((Lesson \ 2.5)\)

<table>
<thead>
<tr>
<th>(x)</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)</td>
<td>-12</td>
<td>-8</td>
<td>-4</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

49. Draw a scatter plot of the data, approximate the best-fitting line, and estimate \(y\)
when \(x = 10\).  \((Lesson \ 2.6)\)

<table>
<thead>
<tr>
<th>(x)</th>
<th>-3</th>
<th>-1</th>
<th>0</th>
<th>4</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)</td>
<td>6</td>
<td>1</td>
<td>-1</td>
<td>-7</td>
<td>-11</td>
</tr>
</tbody>
</table>

Tell whether the given ordered pairs are solutions of the inequality.  \((Lesson \ 2.8)\)

50. \(y \geq -2; (-2, 2), (1, -2)\)            51. \(x - y \leq 6; (-1, -7), (-3, 4)\)