

Algebra I
3.4 Worksheet

NAME: _____
DATE: _____ HOUR: _____

1. Write the expressions modeled by the tiles shown.

$$\begin{array}{c}
 \boxed{x} \quad \boxed{x} \quad \boxed{-} \quad \boxed{-} \\
 \text{+} \quad \begin{array}{c} \boxed{x} \quad \boxed{+} \\ \boxed{+} \end{array} \quad = \quad \boxed{x} \quad \boxed{x} \quad \boxed{x} \quad \boxed{\cancel{+}} \quad \boxed{\cancel{+}} \quad \boxed{-} \\
 \text{(_____)} \quad \text{+} \quad \text{(_____)} \quad = \quad \text{_____}
 \end{array}$$

$$\begin{array}{c}
 \boxed{x} \quad \boxed{x} \quad \boxed{-} \quad \boxed{-} \\
 \text{-} \quad \begin{array}{c} \boxed{x} \quad \boxed{-} \end{array} \quad = \quad \boxed{x} \quad \boxed{-} \\
 \text{(_____)} \quad \text{-} \quad \text{(_____)} \quad = \quad \text{_____}
 \end{array}$$

Decide whether the expression is positive, negative, or zero for $a = 2$ and $b = -4$.

2. $-(a + b)$ $-(2 + -4) = -(-2) = 2$ ^{positive} 3. $a + b$ _____
 4. $-a + (-b)$ _____ 5. $a - b$ _____

Tell whether each statement is true or false when $m = -1$ and $n = -2$.

6. $m + n = -3$ _____ 7. $-(m + n) = -3$ _____
 8. $-m + (-n) = 3$ _____ 9. $m - n = 3$ _____

Tell whether each statement is true or false or cannot be determined. Then explain why.

10. $-a - (b + c) = -a - b + c$ _____
 11. $-a - (b - c) = -a - b + c$ _____
 12. $-(a + b)$ is a negative number. _____

Find the opposite of each expression.

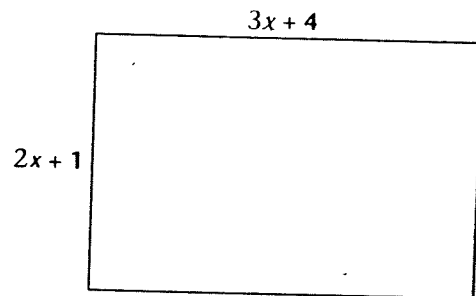
13. $-10t + 1$ _____ 14. $-x + 2z$ _____ 15. $-13 - t$ _____ 16. $4a - 4b$ _____
 17. $a - b + c$ _____ 18. $-4x + 3y - z$ _____ 19. $3w - 4z + 2$ _____
 20. $x + y - 5z$ _____ 21. $-7a - 6b - 4c$ _____ 22. $m - 8n - 4p$ _____

Perform the indicated operations.

23. $2a - a$ _____
24. $6f - 4f$ _____
25. $6r - 3r$ _____
26. $2d - 7d$ _____
27. $5a - (3a + 1)$ _____
28. $3 - (3d - 2d)$ _____
29. $6x - (2x + 5)$ _____
30. $9z - (3 - 6z)$ _____
31. $(2y + 3) + (y - 2)$ _____
32. $(3x + 5) + (6x - 1)$ _____
33. $(5a + 6) + (2a - 4)$ _____
34. $(5z - 3) + (7 - z)$ _____
35. $(3r + 5) + (r + 1)$ _____
36. $(3 - 4y) + (3y + 6)$ _____
37. $(4q + 2) - (2q - 3) + (3q - 1)$ _____
38. $(2m - 2) - (3m - 2) + (m - 1)$ _____
39. $(m + n - p) - (2m + 3n + 4p)$ _____
40. $(7w + 4x) - (3w - z) + (x + z)$ _____
41. $(4 - w) - (w - t) - (w - t)$ _____
42. $(5a - 3c) - (b + c) + (3b - 2c)$ _____
43. $(3 - r) + (4r - 3s + 2) - (1 - s)$ _____
44. $(3x - 5y) - (-2x - 3y - z) + (y - z)$ _____

Using the rectangle shown, write an expression for:

45. the perimeter _____



Place parentheses to make the expressions equivalent.

46. $3x - 4y - 5x + y = 8x - 3y$
47. $-3a + 2b - a - b = -4a + 3b$
48. $-2t - 3s + 3t + 5s = 8s + t$
49. $2 - 5v - v + 3 = -1 - 6v$

50. Write an expression for the total length of line segment AB.

