

Algebra I Honors
Basic Algebraic Concepts

Name _____

Evaluate each expression.

1. $3x + 1$ when $x = 4$

2. $x - 2(x + 2)$ when $x = -1$

3. $3x^2 - \frac{1}{4}x$ when $x = -8$

4. $\frac{2x^2}{(4 - 2x)} + 2$ when $x = 3$

5. $3x - y^3$ when $x = -2, y = 3$

6. $\frac{(4x - 2)^7}{y^3 - 3}$ when $x = \frac{1}{4}, y = -2$

For problems 7-16, identify the appropriate property for each expression.

_____ 7. $3 + \frac{1}{2} = \frac{1}{2} + 3$

_____ 8. $7.2(4 + 1) = 7.2(4) + 7.2(1)$

_____ 9. $(-3)(1) = -3$

_____ 10. $(4 + 19) + 7 = (19 + 4) + 7$

_____ 11. $\left(\frac{1}{4} + 2\right)20 = 5 + 40$

_____ 12. $4 + 0 = 4$

_____ 13. $(6 + 8) + 2 = 6 + (8 + 2)$

_____ 14. $9 \cdot \frac{1}{9} = 1$

_____ 15. $-12 + 12 = 0$

_____ 16. $5(3 \cdot 7) = (5 \cdot 3)7$

Simplify each expression.

17. $-9x + y - x + 5y$

18. $4(x - 4) - 3x$

19. $-3(-5 + 2x) - 8x + 2(x - 1)$

20. $2\left[5\left(\frac{1}{2}x + 3\right) - (x^2 + x) + 4\right]$

21. $5(x + 2y) - 3x - 5y$

22. $\frac{1}{8}(24x - 16y) - \frac{2}{3}(3x - 18y - 2) + \frac{2}{3}$