

NAME _____

DATE _____

Module 2 Writing and Simplifying Algebraic Expressions
Lesson 5 Evaluating Expressions



independent practice

Evaluate each expression for the given values of the variables.

- $-12xy^2$ for $x = 3$, $y = -1$ _____
- $2(v^2 - 8) + w^3$ for $v = 5$, $w = -3$ _____
- $12 - |-ab| + b^3$ for $a = 2$, $b = -4$ _____
- $2\pi r$ for $\pi = 3.14$, $r = 11$ _____
- πr^2 for $\pi = \frac{22}{7}$, $r = 7$ _____
- $\frac{2x + 3y}{3}$ for $x = -12$, $y = 5$ _____
- $\frac{x - y^3}{2 - 3xy}$ for $x = 0$, $y = -6$ _____
- $c^2 - b^2$ for $c = 12$, $b = 8$ _____
- $\sqrt{x} - \sqrt[3]{y}$ for $x = 36$, $y = -8$ _____
- $\frac{x^2 + y^2}{x^3 - y^3}$ for $x = -1$, $y = -3$ _____

Evaluate each expression when $a = -1$, $b = 4$, and $c = -3$.

- $a^3 - |2ac| - c^2$ _____
- $\frac{6a^2 - 10a - 7}{b + 2c}$ _____
- $a^2 + b^2 - 2ac^3$ _____
- $b^2 - 4ac$ _____
- $\frac{-b + \sqrt{b^2 - 9a}}{2a}$ _____
- $\frac{-b + \sqrt[3]{b^2 - 11a}}{2a}$ _____

Evaluate the expression $\frac{-b - \sqrt{b^2 - 4ac}}{2a}$ for the given values of the variables.

- $a = 1$, $b = 6$, $c = 5$ _____
- $a = 1$, $b = 7$, $c = 12$ _____
- $a = 1$, $b = -6$, $c = 8$ _____
- $a = 3$, $b = -4$, $c = -4$ _____

Journal

- Explain why the expression $-x^3$ will always be a negative number, if x is positive, and will always be a positive number if x is negative.
- Use the order of operations to describe how the expressions $(-x)^3$ and $-x^3$ are different.
- In your own words, explain why the order of operations is important. Create your own example to show how the process works.
- Give an example to show why it is important to perform the operations of multiplication and division from left to right.
- Explain how squaring a number and doubling a number are different.

Cumulative Review

Simplify each expression.

- | | |
|--------------------------------|--|
| 1. $3\frac{1}{2} - 5^2$ _____ | 2. $6[-2(5 + -7) - 3] + 12$ _____ |
| 3. $\frac{2}{3}(-9) - 5$ _____ | 4. $\left(\frac{4}{5}\right)(-15) + 7$ _____ |
| 5. $-3 \cdot 0 - 2$ _____ | |

Identify the algebraic property used to get the expression that appears on each indicated line.

- | | |
|---|---|
| <p>6. $3x^2 + 5x^2 + 3(x - 4) + 6$
 a) $3x^2 + 5x^2 + 3x - 12 + 6$
 $8x^2 + 3x - 6$
 a) _____</p> | <p>7. $(5x + 7y) + 3x$
 a) $5x + (7y + 3x)$
 b) $5x + (3x + 7y)$
 c) $(5x + 3x) + 7y$
 $8x + 7y$
 a) _____
 b) _____
 c) _____</p> |
| <p>8. $45 + 9(1) + 4[7 + (-7)]$
 a) $45 + 9(1) + 4(0)$
 b) $45 + 9 + 4(0)$
 c) $45 + 9 + 0$
 d) $45 + 9$
 e) 54
 a) _____
 b) _____
 c) _____
 d) _____</p> | <p>9. $2x(5 + x) + 7(1)$
 a) $2x(5) + 2x(x) + 7(1)$
 b) $2(5)x + 2x(x) + 7(1)$
 $10x + 2x^2 + 7(1)$
 c) $10x + 2x^2 + 7$
 d) $2x^2 + 10x + 7$
 a) _____
 b) _____
 c) _____
 d) _____</p> |

