

LESSON

1-1

Review for Mastery

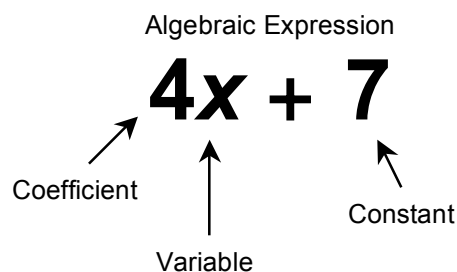
Evaluating Algebraic Expressions

An **algebraic expression** uses at least one letter, or **variable**, which represents a value that can change.

A number that multiplies a variable is its **coefficient**.

A **constant** is a specific number, whose value does not change.

To **evaluate** an algebraic expression, **substitute** a given number for a variable, and find the value of the resulting numerical expression.



Follow the order of operations:

1. Parentheses
2. Multiply or Divide
3. Add or Subtract

Evaluate $5(m + 1) + 8n$ for $m = 10$ and $n = 2$.

$$5(m + 1) + 8n$$

$$5(10 + 1) + 8(2)$$

$$5(11) + 8(2)$$

$$55 + 16$$

$$71$$

Substitute 10 for m and 2 for n .

Parentheses, simplify inside.

Multiply, from left to right.

Add.

Complete to evaluate each expression.

1. $9 + 7z$ for $z = 3$

$$9 + 7 \cdot \underline{\hspace{2cm}}$$

$$9 + \underline{\hspace{2cm}}$$

2. $5(q - 8)$ for $q = 17$

$$5 \cdot (\underline{\hspace{2cm}} - 8)$$

$$5 \cdot (\underline{\hspace{2cm}})$$

3. $25 - 2x$ for $x = 8$

$$25 - 2 \cdot (\underline{\hspace{2cm}})$$

$$25 - \underline{\hspace{2cm}}$$

4. $2(x + 6) + 4$ for $x = 9$

$$2(\underline{\hspace{2cm}} + 6) + 4$$

$$2(\underline{\hspace{2cm}}) + 4$$

$$\underline{\hspace{2cm}} + 4$$

5. $42 - 3(x + 1)$ for $x = 3$

$$42 - 3 \cdot (\underline{\hspace{2cm}} + 1)$$

$$42 - 3 \cdot (\underline{\hspace{2cm}})$$

$$42 - \underline{\hspace{2cm}}$$

6. $22 + 5(2z)$ for $z = 4$

$$22 + 5 \cdot (2 \cdot \underline{\hspace{2cm}})$$

$$22 + 5 \cdot (\underline{\hspace{2cm}})$$

$$22 + \underline{\hspace{2cm}}$$

Answers

LESSON 1-1

Practice A

- | | |
|---------------|-------------|
| 1. 10 | 2. 18 |
| 3. 7 | 4. 13 |
| 5. 36 | 6. 48 |
| 7. 61 | 8. 76 |
| 9. 21.3 | 10. 0.9 |
| 11. 18 | 12. 30 |
| 13. 13 | 14. 19 |
| 15. 22 | 16. 28 |
| 17. \$1.20 | 18. \$3.00 |
| 19. \$6.00 | 20. \$21.00 |
| 21. 232 miles | |

Practice B

- | | |
|-----------------------|-------------------------|
| 1. 20 | 2. 5 |
| 3. 4 | 4. 3 |
| 5. 8 | 6. 23.2 |
| 7. 80 | 8. 52 |
| 9. 25 | 10. 6 |
| 11. 42 | 12. 135 |
| 13. 77 | 14. 72 |
| 15. $\frac{1}{2}$ cup | 16. 2 cups |
| 17. 3 cups | 18. $4\frac{1}{2}$ cups |
| 19. \$6.20 | |

Practice C

- | | |
|-----------|----------|
| 1. 68 | 2. 44 |
| 3. 20 | 4. 15 |
| 5. 25 | 6. 29.5 |
| 7. 5 | 8. 0 |
| 9. 76 | 10. 49 |
| 11. 15 | 12. 47.5 |
| 13. 0.5 | 14. 32.5 |
| 15. 472.5 | 16. 86.5 |

- | | |
|-------------|--------------|
| 17. \$80 | 18. \$200 |
| 19. \$296 | 20. \$345.60 |
| 21. \$28.90 | |

Review for Mastery

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|-----------------|------------------|
| 1. 3; 21; 30 | 2. 17; 9; 45 |
| 3. 8; 16; 9 | 4. 9; 15; 30; 34 |
| 5. 3; 4; 12; 30 | 6. 4; 8; 40; 62 |

Challenge

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|-------------|----------------|
| 1. by 3 | 2. coefficient |
| 3. $3x$ | 4. 3; add 2 |
| 5. $2x - 8$ | 6. $60 - 5x$ |

Problem Solving

- | | |
|--------------------|--------------------|
| 1. 150 square feet | 2. 56 feet |
| 3. \$240 | 3. \$9.00 per hour |
| 5. B | 6. H |
| 7. A | 8. G |

Reading Strategies

- $2x + 9$ has a variable. $5(3 + 8)$ does not have a variable.
- An algebraic expression has at least one variable and a numerical expression has none.
- 7 times y
- 22
- 27

Puzzles, Twisters & Teasers

- | | |
|--------|--------|
| 1. 72 | 2. 26 |
| 3. 16 | 4. 120 |
| 5. 75 | 6. 37 |
| 7. 108 | 8. 404 |
| 9. 68 | |

THE ROADRUNNER