

Section 2.6

TERMINOLOGY

2.6

For each of the following terms, provide 1) a definition in your own words, 2) the formal definition (as provided by your text or instructor), and 3) an example of the term using a drawing or problem.

Associative Properties

Your definition	
Formal definition	
Example	

Coefficient

Your definition	
Formal definition	
Example	

Commutative Property

Your definition	
Formal definition	
Example	

Constant

Your definition	
Formal definition	
Example	

Distributive Property

Your definition	
Formal definition	
Example	

Evaluate

Your definition	
Formal definition	
Example	

Expression

Your definition	
Formal definition	
Example	

Like Terms

Your definition	
Formal definition	
Example	

Combine Like Terms

Your definition	
Formal definition	
Example	

Simplify

Your definition	
Formal definition	
Example	

Term

Your definition	
Formal definition	
Example	

Variable

Your definition	
Formal definition	
Example	

READING AND SELF-DISCOVERY QUESTIONS

2.6

- In the expression $5x + 7$, what is the constant? The coefficient? The variable?
The constant is 7, the coefficient is 5, and the variable is x .
- How do you identify like terms?
Like terms are terms that have the same layout. For example, $2x^2y^3$ and $-3x^2y^3$ are like terms, but $2a^3b^2$ and $\frac{7}{9}a^2b^3$ are not like terms.
- When you combine like terms in an expression, which part or parts change, the coefficient, the variable, or both?
The coefficient changes.
- When you evaluate an expression, you replace the _____ **variable** _____ with given _____ **values** _____.
- What operations do you use when applying the distributive property?
Addition/subtraction and multiplication.
- After you use the distributive property, do the parentheses remain?
The parentheses do not remain.

CRITICAL THINKING QUESTION

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- How would you describe the difference between a constant and a coefficient? A constant and a variable?
A constant is a numeral that is not multiplied by a variable. The coefficient is a numeral that is multiplied by a variable.

DEMONSTRATE YOUR UNDERSTANDING

2.6

1. Show why $4(x + 6) = 4x + 24$

$$\begin{aligned} &(x + 6) + (x + 6) + (x + 6) + (x + 6) \\ &x + 6 + x + 6 + x + 6 + x + 6 \\ &x + x + x + x + 6 + 6 + 6 + 6 \\ &4 \cdot x + 4 \cdot 6 \\ &4x + 24 \end{aligned}$$

2. Draw a shape with a perimeter of 24 units. Be sure to label your shape so that its perimeter can be calculated.

Answers will vary. Students should draw a closed shape composed of straight lines. All sides of the shape must be labeled with their lengths. The perimeter should equal 24 units.

IDENTIFY AND CORRECT THE ERROR

2.6

In the second column, identify the error(s) you find in the following worked solution. Describe the error made in the second column. Solve the problem correctly in the third column.

Problem	Describe Error	Correct Process
Evaluate for $a = -3$, $b = 2$, $c = -1$ $a^2b + c$	The substitution for a^2 is not done correctly.	$a^2b + c$ $(-3)^2 \cdot (2) + (-1)$ $9 \cdot 2 - 1$ $18 - 1$ 17
Worked Solution (What is wrong here?)		
$-3^2(2) + (-1)$ $-9(2) + (-1)$ $-18 + -1$ -19		