



LESSON 7.2b
Into The Unknown

6.EE.2 6.EE.2a
6.EE.2b 6.EE.2c

Objective

Introduction to Algebraic Expressions

Warm-Up



In the school cafeteria, soft pretzels sell for \$1.25 each. Determine how much money the cafeteria earns in each situation.

1. On Monday, the cafeteria sold 13 soft pretzels.

2. On Wednesday, the cafeteria sold 37 soft pretzels.

3. On Thursday, the cafeteria sold 62 soft pretzels.



As you learned previously, an algebraic expression contains at least one variable and sometimes numbers and operations. A term of an algebraic expression is a number, variable, or product of numbers and variables.

WORKED EXAMPLE

Consider the expression $3x + 4y - 7$.

The expression has three terms: $3x$, $4y$, and 7 . The operation between the first two terms is addition, and the operation between the second and third term is subtraction.

The first term is 3
multiplied by the variable x .

The second term is 4
multiplied by the variable y .

The third term is a
constant term of 7.

$$3x + 4y - 7$$

1. Consider two algebraic expressions: $8 + 5x$ and $8 - 5x$

a. Identify the terms in each algebraic expression.

b. Identify the operation between each term in each algebraic expression.

c. What is the same in both expressions?

d. What is different in the expressions?

2. Identify the number of terms, and then the terms themselves for each algebraic expression.

a. $4 - 3x$

b. $4a - 9 + 3a$

c. $7b - 9x + 3a - 12$



To evaluate an algebraic expression means to determine the value of the expression for a given value of each variable. When you evaluate an algebraic expression, you substitute the given values for the variables, and then determine the value of the expression.

1. Write a sentence to describe the meaning of each algebraic expression. Then, evaluate the algebraic expression for the given value.

a. $3x - 4$, for $x = 10$

b. $11 - s$, for $s = 2$

c. $10 - z$, for $z = 8$

d. $5 - \frac{y}{4}$, for $y = 2$

e. $7 + 5a$, for $a = 20$

f. $\frac{b}{4}$, for $b = 8$

2. Copy and complete each table.

a.

h	$3h - 2$
2	
$\frac{7}{3}$	
5.1	
$\frac{5}{6}$	

b.

m	$1 + m$
0	
$\frac{2}{3}$	
4	
1.7	

c.

z	$\frac{2z}{3} + 1$
1	
2	
5	
11	

d.

p	$0.5p$
0	
1	
1.5	
2.5	

**Show You
KNOW**

Expression Construction

1. Construct an algebraic expression for each description.

a. There are 2 terms. The first term is a constant. It is added to the second term, which is a product of a number and a variable.

b. There are 4 terms. The first term is a variable divided by 11. This is added to a second term, which is a constant. The third term is a second variable multiplied by three-fourths. The third term is subtracted from the first 2 terms. The last term, a different constant, is added to the other 3 terms.

c. The cube of a variable subtracted from a constant and then added to the square of the same variable.

d. A number multiplied by the square of a variable minus a number multiplied by the same variable minus a constant.



LESSON 7.2b Into The Unknown



Objective

Introduction to Algebraic Expressions

Practice

Write an algebraic expression to represent each situation.

1. A T-shirt costs \$5.99.
 - a. How much will you spend if you buy x T-shirts?
 - b. Evaluate your expression to calculate the amount of money you will spend if you buy 4 shirts or 10 shirts.
2. You have 7 folders and you want to put the same number of pages in each folder.
 - a. If you have a total of p pages, how many pages will be in each folder?
 - b. Evaluate your expression to calculate the number of pages in each folder if you have 147 pages or 245 pages.
3. You have a coupon for \$5 off your total bill at Mama's Meals on Main.
 - a. How much will you pay after using the coupon if your bill was b dollars?
 - b. Evaluate your expression to calculate the amount you will pay if your bill was \$23.45 or \$54.83.
4. You have already read two and a half hours for the Read-a-Thon.
 - a. How long will you have read if you read an additional h hours?
 - b. Evaluate your expression to calculate the amount of time you will have read if you read 3 or $5\frac{1}{2}$ additional hours.

