

Learning Objective: Students will be able to write and evaluate an expression written in words.

# Warm Up

3.  $\frac{5}{7} \times \frac{3}{5}$

7.  $\frac{13}{8} \times \frac{4}{7}$

11.  $\frac{23}{3} \times \frac{1}{8}$

4.  $\frac{5}{4} \times \frac{3}{4}$

8.  $\frac{3}{5} \times \frac{13}{8}$

12.  $\frac{3}{4} \times \frac{1}{4}$

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# Warm Up Answers

$$\begin{aligned} 3. \quad & \frac{5}{7} \times \frac{3}{5} \\ & = \frac{3}{7} \end{aligned}$$

$$\begin{aligned} 7. \quad & \frac{13}{8} \times \frac{4}{7} \\ & = \frac{13}{14} \end{aligned}$$

$$\begin{aligned} 11. \quad & \frac{23}{3} \times \frac{1}{8} \\ & = \frac{23}{24} \end{aligned}$$

$$\begin{aligned} 4. \quad & \frac{5}{4} \times \frac{3}{4} \\ & = \frac{15}{16} \end{aligned}$$

$$\begin{aligned} 8. \quad & \frac{3}{5} \times \frac{13}{8} \\ & = \frac{39}{40} \end{aligned}$$

$$\begin{aligned} 12. \quad & \frac{3}{4} \times \frac{1}{4} \\ & = \frac{3}{16} \end{aligned}$$

## Lesson Objective:

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write and evaluate an expression written in words.

# Self-Evaluation Scale

Score	Description
4	I can teach other students how to write and evaluate an expression written in words.
3	I can write and evaluate an expression written in words.
2	I recognize, but still need help to write and evaluate an expression written in words.
1	I do not know how to write and evaluate an expression written in words.

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# Activity 1 & 2

Follow along with Activities 1 & 2 on pages 57 & 58 of your Big Ideas Record and Practice Journal.

## October 31, 2016 Lesson 3.1

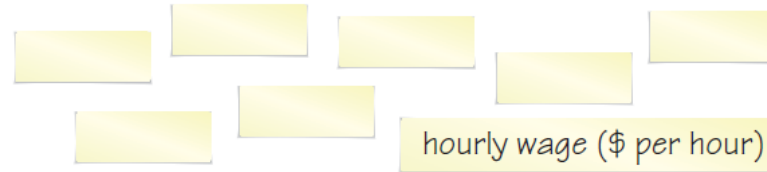
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- a. You babysit for 3 hours. You receive \$12. What is your hourly wage?
- Write the problem. Underline the important numbers and units you need to solve the problem.
  - Read the problem carefully a second time. Circle the key word for the question.



You babysit for 3 hours. You receive \$12.  
What is your hourly wage?

- Write each important number or word, with its units, on a piece of paper. Write +, -, ×, ÷, and = on five other pieces of paper.



- Arrange the pieces of paper to answer the key word question, “What is your hourly wage?”
- Evaluate the expression that represents the hourly wage.

$$\begin{aligned} \text{hourly wage} &= \square \div \square && \text{Write.} \\ &= \square && \text{Evaluate.} \end{aligned}$$

❖ So, your hourly wage is \$  $\square$  per hour.

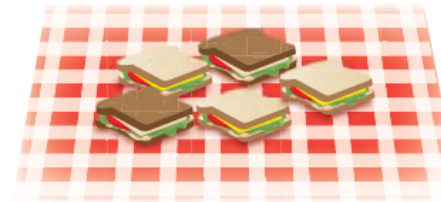
- b. How can you use your hourly wage to find how much you will receive for any number of hours worked?

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- a. You wash cars for 2 hours. You receive \$6. How much do you earn per hour?



- b. You have \$60. You buy a pair of jeans and a shirt. The pair of jeans costs \$27. You come home with \$15. How much did you spend on the shirt?



- c. For lunch, you buy 5 sandwiches that cost \$3 each. How much do you spend?



- d. You are running a 4500-foot race. How much farther do you have to go after running 2000 feet?



- e. A young rattlesnake grows at a rate of about 20 centimeters per year. How much does a young rattlesnake grow in 2 years?

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# Algebraic Expression

Expression that contains numbers, operations,  
and one or more symbol.



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# Terms

Part of an algebraic expression

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# Variable

Symbol that represents one or more numbers

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# Coefficient

The numerical factor of a term that contains a variable

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# Constant

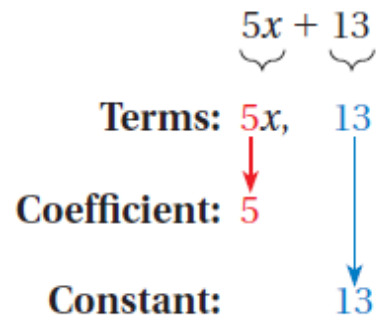
A term without a variable

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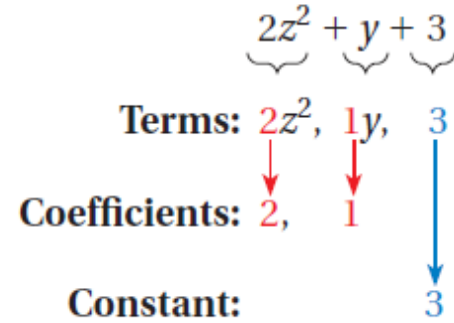
# 1 Identifying Parts of an Algebraic Expression

Identify the terms, coefficients, and constants in each expression.

a.  $5x + 13$



b.  $2z^2 + y + 3$



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## 2 Writing Algebraic Expressions Using Exponents

Write each expression using exponents.

a.  $d \cdot d \cdot d \cdot d$

Because  $d$  is used as a factor 4 times, its exponent is 4.

••• So,  $d \cdot d \cdot d \cdot d = d^4$ .

b.  $1.5 \cdot h \cdot h \cdot h$

Because  $h$  is used as a factor 3 times, its exponent is 3.

••• So,  $1.5 \cdot h \cdot h \cdot h = 1.5h^3$ .

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### 3 Evaluating Algebraic Expressions

a. Evaluate  $k + 10$  when  $k = 25$ .

$$\begin{aligned} k + 10 &= 25 + 10 && \text{Substitute 25 for } k. \\ &= 35 && \text{Add 25 and 10.} \end{aligned}$$

b. Evaluate  $4 \cdot n$  when  $n = 12$ .

$$\begin{aligned} 4 \cdot n &= 4 \cdot 12 && \text{Substitute 12 for } n. \\ &= 48 && \text{Multiply 4 and 12.} \end{aligned}$$

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## 4 Evaluating an Expression with Two Variables

Evaluate  $a \div b$  when  $a = 16$  and  $b = \frac{2}{3}$ .

$$a \div b = 16 \div \frac{2}{3}$$

Substitute 16 for  $a$  and  $\frac{2}{3}$  for  $b$ .

$$= 16 \cdot \frac{3}{2}$$

Multiply by the reciprocal of  $\frac{2}{3}$ , which is  $\frac{3}{2}$ .

$$= 24$$

Multiply.



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## 5 Evaluating Expressions with Two Operations

a. Evaluate  $3x - 14$  when  $x = 5$ .

$$3x - 14 = 3(5) - 14$$

Substitute 5 for  $x$ .

$$= 15 - 14$$

Using order of operations, multiply 3 and 5.

$$= 1$$

Subtract 14 from 15.

b. Evaluate  $z^2 + 8.5$  when  $z = 2$ .

$$z^2 + 8.5 = 2^2 + 8.5$$

Substitute 2 for  $z$ .

$$= 4 + 8.5$$

Using order of operations, evaluate  $2^2$ .

$$= 12.5$$

Add 4 and 8.5.

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# Assignment

Complete problems 8, 12, 16, 20, 26, 30, 34, 36, 44, 46, 50, & 52 on pages 115 - 117 in your Big Ideas Text Book.

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# Homework

In your Big Ideas Record and Practice Journal  
page 34.

