

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

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

$$7. \frac{13}{8} \times \frac{4}{7} \\ = \frac{13}{14}$$

$$11. \frac{23}{3} \times \frac{1}{8} \\ = \frac{23}{24}$$

$$4. \frac{5}{4} \times \frac{3}{4} \\ = \frac{15}{16}$$

$$8. \frac{3}{5} \times \frac{13}{8} \\ = \frac{39}{40}$$

$$12. \frac{3}{4} \times \frac{1}{4} \\ = \frac{3}{16}$$

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Lesson 3.1

October 30, 2014

Essential Question:

How can you write and evaluate an expression that represents a real-life problem?

Lesson 3.1

November 10, 2016

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, & 59 of your Big Ideas Record and Practice Journal.

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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.

12 ÷ 3 = \$4.00

hourly wage (\$ per hour)

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

$$\text{hourly wage} = \square \div \square \quad \text{Write.}$$

$$= \square \quad \text{Evaluate.}$$

❖ 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?



$$6 \div 2 = \$3.00$$

- 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?



$$60 - 27 - 15 = 18$$

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



$$5 \times 3 = \$15$$

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



$$4500 - 2000 = 2500$$

$$20 \times 2 = 40 \text{ cm}$$

- 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

\underline{ax}

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$3y$ ← variable

Variable

Symbol that represents one or more numbers

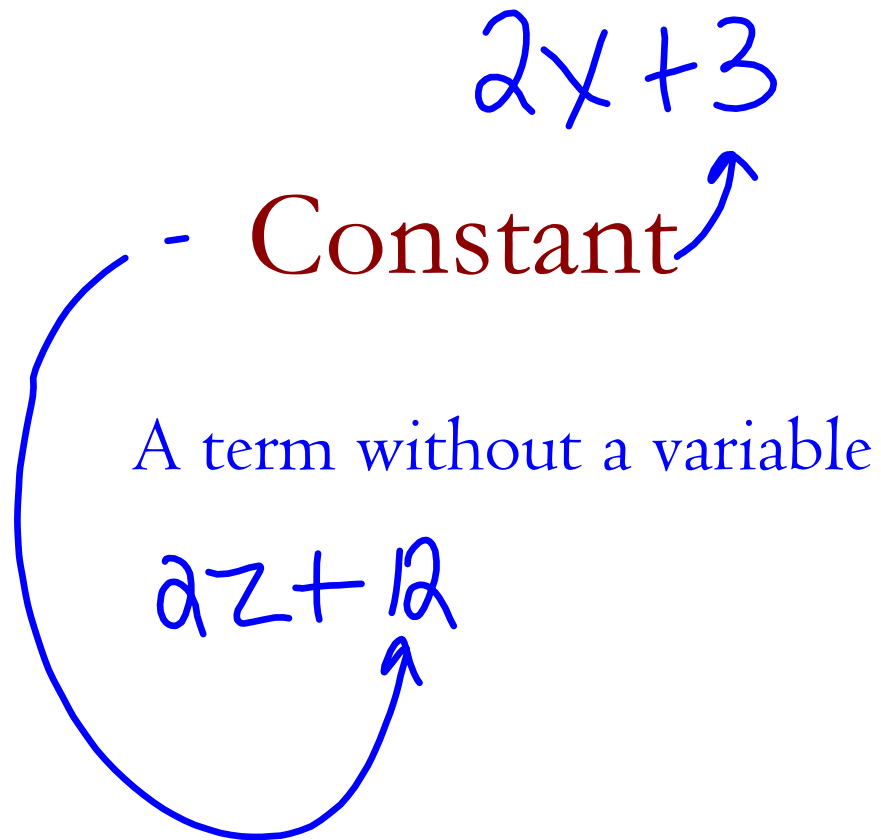
$2x$
↑
variable

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Coefficient

The numerical factor of a term that contains a variable

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1 Identifying Parts of an Algebraic Expression

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

a. $5x + 13$

$$\begin{array}{l} \underbrace{5x} + \underbrace{13} \\ \text{Terms: } 5x, 13 \\ \text{Coefficient: } 5 \\ \text{Constant: } 13 \end{array}$$

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

$$\begin{array}{l} \underbrace{2z^2} + \underbrace{y} + \underbrace{3} \\ \text{Terms: } 2z^2, 1y, 3 \\ \text{Coefficients: } 2, 1 \\ \text{Constant: } 3 \end{array}$$

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2 Writing Algebraic Expressions Using Exponents

Write each expression using exponents.

a. $d \cdot d \cdot d \cdot d$ d^4

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 $k = 25$.

$$\begin{aligned}k + 10 &= 25 + 10 \\ &= 35\end{aligned}$$

Substitute 25 for k .

Add 25 and 10.

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

$$\begin{aligned}4 \cdot n &= 4 \cdot 12 \\ &= 48\end{aligned}$$

Substitute 12 for n .

Multiply 4 and 12.

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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

11/14- Decimal sheet.

11/15 - workbook page 60, practice 3.1

