

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

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

Warm Up Answers

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

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

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

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

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

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

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

Lesson 3.1

November 21, 2016

Essential Question:

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

Lesson 3.1

November 21, 2016

Lesson Objective:

Students will be able to:

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.

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

Activity 1 & 2

Follow along with Activities 1 & 2 on pages 57, 58, & 59 of your Big Ideas Record and Practice Journal.

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

- 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.

$12 \div 3 = \$4.00$

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?

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

- 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?



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

Algebraic Expression

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

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

Terms

Part of an algebraic expression

\underbrace{ax}

.

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

$3y$ ← variable

Variable

Symbol that represents one or more numbers

$2x$
↑ variable

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

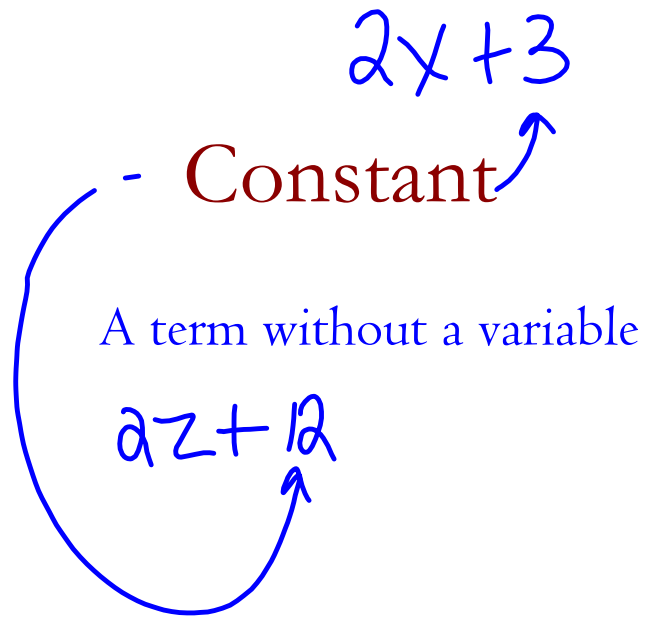


Coefficient

The diagram shows the word "Coefficient" in a dark red serif font. Above the word, the expression "2x" is written in a green, handwritten-style font. A green arrow points from the word "Coefficient" up and to the right towards the "2" in "2x", indicating that the coefficient is the numerical factor of the term.

The numerical factor of a term that contains a variable

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



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

1 Identifying Parts of an Algebraic Expression

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

a. $5x + 13$

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

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

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

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

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

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

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 $n = 12$.

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

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

4 Evaluating an Expression with Two Variables

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

$$a \div b = 16 \div \frac{2}{3} \quad \text{Substitute 16 for } a \text{ and } \frac{2}{3} \text{ for } b.$$

$$= 16 \cdot \frac{3}{2} \quad \text{Multiply by the reciprocal of } \frac{2}{3}, \text{ which is } \frac{3}{2}.$$

$$= 24 \quad \text{Multiply.}$$

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

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.

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

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.

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

Homework

