

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?

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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.

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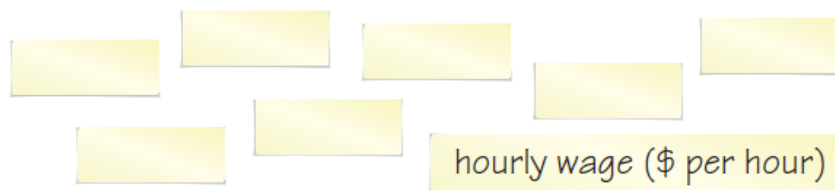
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- a. You babysit for 3 hours. You receive \$12. What is your hourly wage?
- Write the problem. Underline the important numbers and units you need to solve the problem.
 - Read the problem carefully a second time. Circle the key word for the question.



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.



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.

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

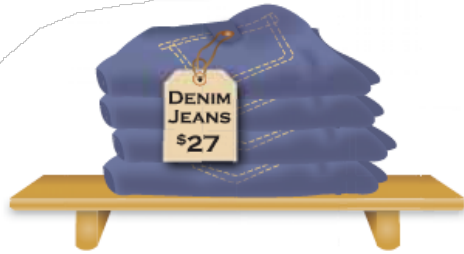
❖ So, your hourly wage is \$ \square per hour.

- 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?



- 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

Separated by $+$, $-$

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Variable

Symbol that represents one or more numbers

$$2 + 2 = X$$

$$X + 2 = 4$$

$$X = 2$$

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X

3X

Coefficient

The numerical factor of a term that contains a variable

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$$4x + 3$$

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. $5x + 13$

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

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

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

$$2z^2 + 2z$$

$$z^2, z$$

$$2, 2$$

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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 $k = 25$.

$$k + 10 = 25 + 10$$

Substitute 25 for k .

$$47 = 35$$

Add 25 and 10.

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

$$4 \cdot n = 4 \cdot 12$$

Substitute 12 for n .

$$= 48$$

Multiply 4 and 12.