November 24, 2015 Math 6 Lesson 3.1

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

Warm Up

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

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

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

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

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

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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Essential Question:

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

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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.

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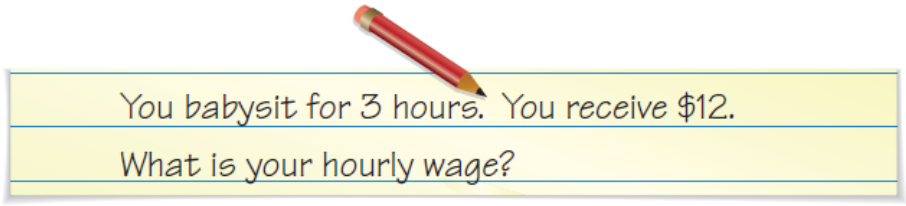
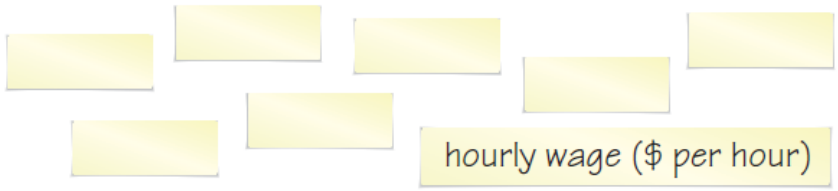
a. You babysit for 3 hours. You receive $12. What is your hourly wage?

- 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.



- 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.

hourly wage = ☐ ÷ ☐ Write.

= ☐ Evaluate.

∴ So, your hourly wage is $☐ 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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Learning Objective: Students will be able to write and evaluate an expression written in words.

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. $5x + 13$

$5x + 13$

Terms: $5x$, 13

Coefficient: 5

Constant: 13

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

$2z^2 + y + 3$

Terms: $2z^2$, $1y$, 3

Coefficients: 2, 1

Constant: 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 $k = 25$.

$k + 10 = 25 + 10$ Substitute 25 for k.

$= 35$ 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.

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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.

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