Lesson 3.1 October 31, 2014

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.

Algebraic Expression

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

Terms

Part of an algebraic expression

Variable

Symbol that represents one or more numbers

Coefficient

The numerical factor of a term that contains a variable

Constant

A term without a variable

1 Identifying Parts of an Algebraic Expression

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

a.
$$5x + 13$$

b. $2z^2 + y + 3$
 $5x + 13$
 $2z^2 + y + 3$

Terms: $5x$, 13

Coefficient: 5

Constant: 13

Constant: 3

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

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.

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.



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.

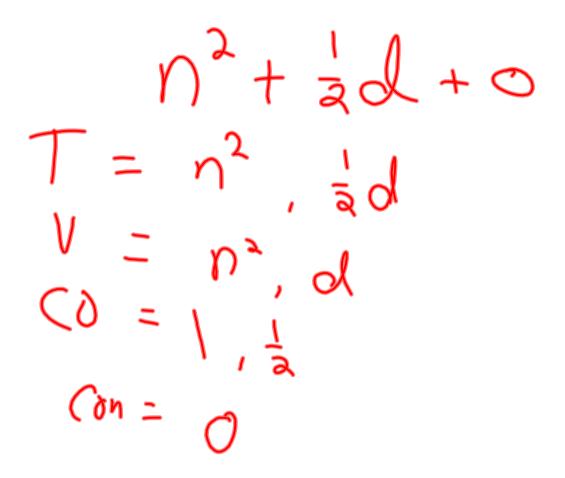
b. Evaluate $z^2 + 8.5$ when z = 2.

$$z^2 + 8.5 = 2^2 + 8.5$$
 Substitute 2 for z.
 $= 4 + 8.5$ Using order of operations, evaluate 2^2 .
 $= 12.5$ Add 4 and 8.5.

Assignment

Complete problems 8, I2, I6, 20, 26, 30, 34, 36, 44, 46, 50, & 52 on pages II5 - II7 in your Big Ideas Text Book.

Terms =
$$7h$$
, 3
Variable = $7h$, 3
Coeff: = $7h$
Coeff: = $7h$



Homework

In your Big Ideas Record and Practice Journal page 60 + 2 Candies each!!!