

# Algebra I

## Notes Section 1.1

### Evaluate Expressions

#### Big Ideas

1. How to evaluate algebraic expressions and powers.
2. How to substitute the given value for the variable and then perform the operation.
3. How to evaluate a power, multiply the base by itself the number of times indicated by exponent.

#### Vocabulary

Variable : \_\_\_\_\_

Algebraic Expression: \_\_\_\_\_

**EXAMPLE 1** Evaluate the expression when  $n = 3$ .

a)  $13 \cdot n$  \_\_\_\_\_

b)  $9/n$  \_\_\_\_\_

c)  $n - 1$  \_\_\_\_\_

d)  $n + 8$  \_\_\_\_\_

**EXAMPLE 2** The total cost of seeing a movie at a theater can be represented by the expression  $a + r$  where  $a$  is the cost (\$) of admission and  $r$  is the cost (\$) of refreshments. Suppose you pay \$7.50 for admission and \$7.25 for refreshments. Find the total cost.

**EXAMPLE 3** Write the power in words and as a product.

- a)  $7^1$  \_\_\_\_\_
- b)  $5^2$  \_\_\_\_\_
- c)  $(1/2)^2$  \_\_\_\_\_
- d)  $z^5$  \_\_\_\_\_

**EXAMPLE 4** Evaluate the expression.

a)  $x^4$  when  $x = 2$

b)  $n^3$  when  $n = 1.5$

**EXAMPLE 5** Each edge of the medium-sized pop-up storage cube shown is 14 inches long. The storage cup is made so that it can be folded flat when not in use. Find the volume of the storage cube.

