

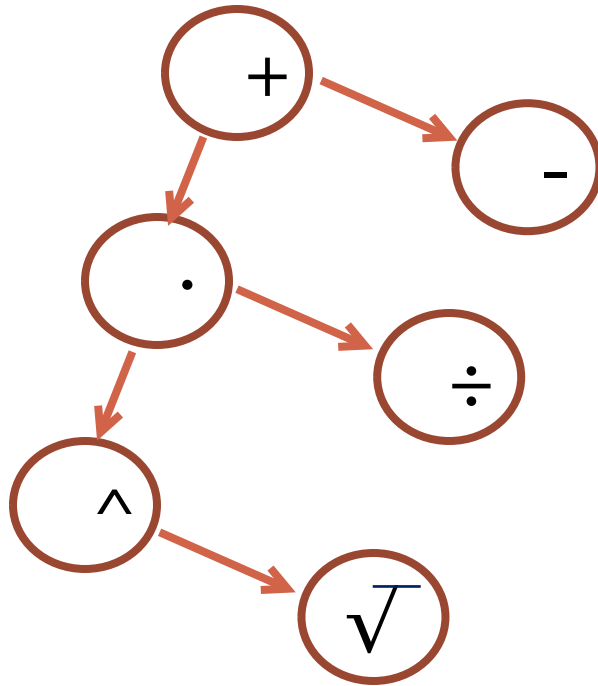
Algebra I



SECTION 2.7 **MULTIPLYING AND DIVIDING EXPRESSIONS**

**OBJECTIVES: MULTIPLY AND DIVIDE
EXPRESSIONS CONTAINING VARIABLES**

Basic Mathematical Operations



Power: Repeated multiplication of the same factor.

$$x^6 = x \cdot x \cdot x \cdot x \cdot x \cdot x$$

Multiplying and Dividing Expressions

Power: An expression such as x^2 or x^3 .

In the expression such as x^n , x is called the base and n is called the exponent. The exponent is the number of times the base appears as a factor.

Example:

$$\begin{aligned} 3x^3y^2 \cdot (-16xy^3) &= 3 \cdot x \cdot x \cdot x \cdot y \cdot y \cdot (-16) \cdot x \cdot y \cdot y \cdot y \\ &= -48 x^4 y^5 \end{aligned}$$

Example: Simplify

$$\frac{-27x^6y^2}{-3x^4y} = \frac{-27\gamma x\gamma x\gamma x\gamma x\gamma x\gamma y\gamma y}{-3\gamma x\gamma x\gamma x\gamma x\gamma y} = -9x^2y$$

Recall: $9(61) = 9(60) + 9(1)$

Example: Simplify

1. $8x(-5x - 9)$

2. $(-3a - 4)(-5)$

Practice: P98 Try This after Example 1.

Example: Simplify

1. $(4a - b + 3) + 2(5a + 2b - 1)$

2. $x^2 - 2(3 - x^2)$

3. $8x^2 - (2 - 5x^2)$

4. $8x^2 + 10(2 - 5x^2)$

Practice: P98 Try This after example 2

Dividing an Expression

For all real numbers a , b , and c , where $c \neq 0$:

$$\frac{a + b}{c} = \frac{a}{c} + \frac{b}{c} \quad \text{and} \quad \frac{a - b}{c} = \frac{a}{c} - \frac{b}{c}$$

Example: Simplify $\frac{10x^2 + 5}{5}$

Practice: P100 Try This at bottom of page

If Time: P101 #6-10 and 14-16

Homework: Practice 2.7 #1-20a and P103 #62-86e