

Unit 2: Solving Equations and Inequalities
Lesson 1: Order of Operations, Solving Equations/Inequalities

When we combine numbers and/or variables using addition, subtraction, multiplication, and division, we form an _____.

The _____ of an algebraic expression are those parts that are separated by addition.

⇒ Parts of an **algebraic expression**:

$$5x^4 + 3x^2y^3 - 2x + 4$$

Practice:

Identify the terms of each algebraic expression. If applicable, identify the constant term of the expression.

Algebraic Expression	Terms	Constant Term
$10xy + 5$		
$4h^2 - 3k^2 - 5h + 9m$		
$t^2 - 3t + \frac{1}{t}$		
$-7y^2 + 2y - 8$		

⇒ Parts of a **term**:

$$5x^4$$

Practice:

Identify the parts of each term.

Term	Coefficient	Base	Exponent
$9u^8$			
$\frac{5}{3}t$			
$\frac{x^4}{2}$			

Order of Operations:

P:

E:

M:

A:

D:

S:

P
E
M
D
A
S

Example:

1. $3 + (5 - 1)^2 - 4$

2. $3 - \frac{6}{2}$

3. $5(3 + 4 \cdot 2) - 6^2$

4. $5 - 4(8 - 6)$

5. $12 + 16 \div 4 \cdot 3 - 5 \cdot 0$

6. $2 - 3(x - 1)$

Some vocabulary:

An **expression** is

An **equation** is

To **evaluate** an expression means

To **simplify** an expression means

To **solve** an equation means

Example: Simplify.

1. $6 - t + 3t - 4 + 2t$

2. $(7x + 6) - 2(5x + 5)$

3. Josh spent \$425 of his \$1685 budget for home improvements. He would like to replace six interior doors next. What can he afford to spend on each door?

Solving for a variable

An **equation** is a mathematical sentence stating that 2 expressions are _____.

When we solve an equation, we are finding those values of the unknown that make the statement true.

Which would we try to get rid of first when solving for x (the 1 or the 2): $2x + 1 = 5$

Which would we try to get rid of first when solving for x (the 1 or the 2): $\frac{x + 1}{2} = 5$