

Equation Terminology Review

Before solving the puzzles we'll do a quick equation terminology review. Let's start with the key components of an **algebraic expression**:

Key Components of an Algebraic Expression:

Algebraic Expression - A collection of numbers, variables, and operators (with NO equals sign), packaged into a mathematical phrase.

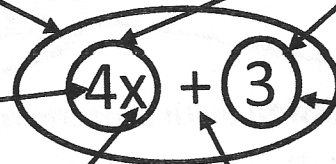
Terms - combinations of constants and variables, separated by operators/operations.

Coefficient
- A number that is multiplied by the variable.

Variable - an unknown amount, represented by a letter.

Operator/Operation
- addition, subtraction, multiplication, division.

Constant - A number that stands alone (without a variable) in an expression.



A few other things you should know about expressions before moving on to equations:

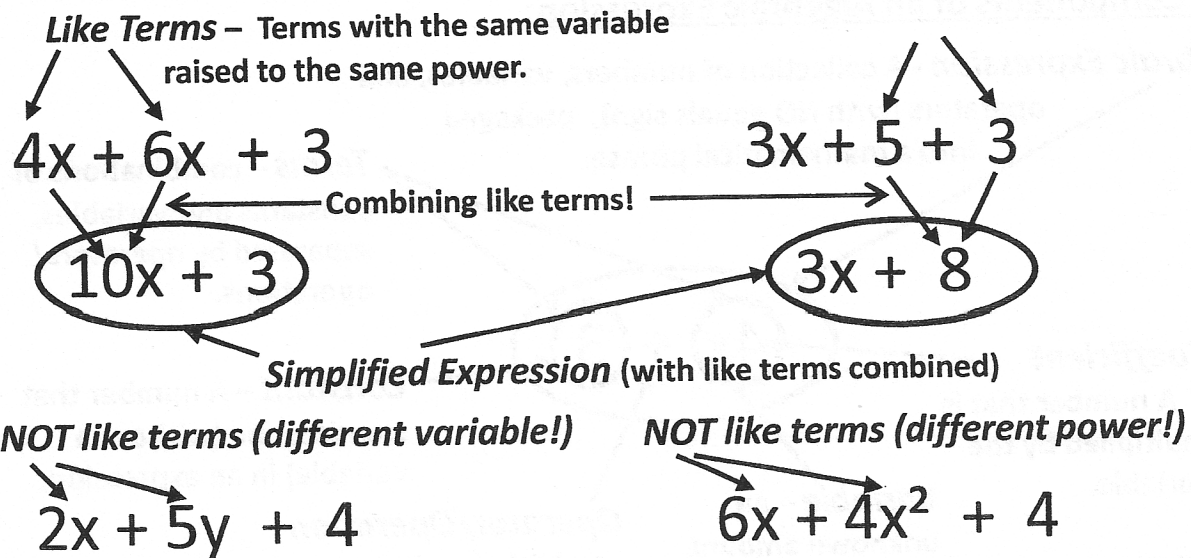
Other Things to Know About Expressions:

1. An expression with no variable in it (numbers and operators only) is called a **numerical expression** (examples: $4 + 3$, $7 \cdot 8$, $8 + 6 - 2$).
2. **Positive** constants and coefficients are those that are greater than zero.
3. **Negative** constants and coefficients are those that are less than zero.
4. A constant that is being subtracted in an expression is considered a negative constant. For example, the constant in $4x - 2$ is -2 .

Equation Terminology Review (continued)

There are several things we can do with an expression, one of them is to **simplify the expression** by combining like terms.

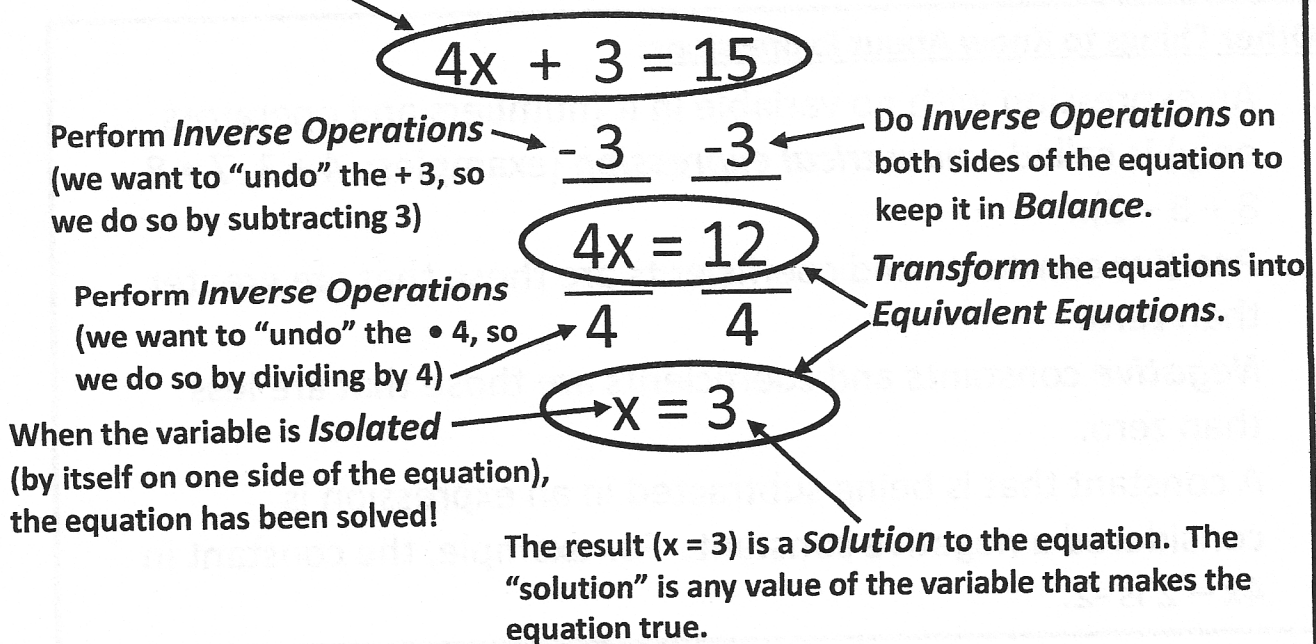
Simplifying Expressions by Combining Like Terms:



We can also set two algebraic expressions equal to each other to form an equation, and then **solve the equation** step by step:

Solving an Algebraic Equation:

Equation – Two algebraic expressions set equal to each other.



You are now on your way. Now go forth and solve those puzzles!

What do you call it when a doctor works on a patient while reciting poetry?

Directions: Fill in the blanks by selecting an answer from the selections below. Insert the letter for that answer under the question number at the bottom of the page. When you have finished, you will have answered the question above.

- (1) A(n) _____ can be either addition, subtraction, division, or multiplication.
- (2) A number that is greater than 0 is called a(n) _____ number.
- (3) A(n) _____ is a collection of numbers and mathematical operators.
- (4) A(n) _____ is an unknown part of an equation, represented by a letter.
- (5) Two expressions set equal to each other creates a(n) _____ .
- (6) Each group of variables and numbers, separated by operators, is called a(n) _____ of the equation.
- (7) We _____ the variable by performing inverse operations on both sides of the equation until it stands by itself.

As we solve an equation, we change, or (8) _____ it into a(n) (9) _____ .

- (10) A(n) _____ is a collection of numbers, variables, and mathematical operators.
- (11) A large land mammal with floppy ears and a long trunk is called a(n) _____ .
- (12) A(n) _____ is a number that stands by itself in an equation.

We can (13) _____ an expression by combining (14) _____, which contain the same variable raised to the same power.

- (15) A(n) _____ to an equation is any value of the variable that makes the equation true.
- (16) When we perform the same operation on both sides of the equation, the equation stays in _____ .

(17) The number that is multiplied by the variable is called the _____ of the variable.

P Coefficient	E Numerical Expression	I Balance	R Variable
S Simplify	D Solve	– Like Terms	O Equation
A Positive	E Term	N Constant	G Negative
O Transform	R Equivalent Equation	N Elephant	V Solution
T Isolate	I Algebraic Expression	U Power	E Operation

16	12	14	15	1	4	13	6		5	17	3	9	2	7	10	8	11
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Name: _____

Date: _____

Class: _____

What did the variable that had difficulty with English say when he was tardy for a party because he felt sick?

Directions: Match each question to an answer on the right. Insert the letter for that answer under the question number at the bottom of the page. When you have finished, you will have answered the question above.

1. I have a **coefficient** of 3 and a **constant** of 2.
2. I have four **terms** on the left side of the equation.
3. The **inverse operations** that need to be performed to **solve me** are subtraction and multiplication.
4. The **constant** on the left side of the equation is 3.
5. I can be **transformed** into the **equivalent equation**; $x = 6$.
6. My **solution** is $x = 15$.
7. I have **like terms** that can be combined to make $5x$.
8. The **constant** on the left side of the equation is -2 .
9. I have **like terms** that can be combined to get 18.
10. I have two **constants**. One is twice as large as the other.
11. The **expressions** on the left and right sides both have two **terms**.
12. I am a one step equation that requires division as the **inverse operation** and is **equivalent** to $x = 8$.
13. The **coefficient** is 12.

J	$2x - 3 = 5$
■	$3x - 2 = 5$
E	$2x + 3 = 12$
O	$3x + 2 = 5$
M	$11x + 4 = 8$
!	$7x = 42$
L	$12x - 4 = 8$
S	$2x + 3x + 4 = 12$
■	$5 + 3x - 2x = 16$
O	$11 = 2 - 9 + 4x + 5x$
E	$\frac{x}{5} = 3$
■	$4 + 9 + 5 + x = 2x$
A	$\frac{x}{4} + 7 = 12$
T	$\frac{x}{4} - 7 = 2x + 3$
I	$9x = 72$
P	$48x = 6$
R	$42x = 7$

12	8	7	1	9	13	3	11	6	2	10	4	5
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