Combining Like Terms

Objectives: I can combine like terms to simplify variable expressions.

In an expression, the **terms** are the elements separated by the plus or minus sign. A **coefficient** is the number being multiplied by a variable.

3a+b-5

3 is the coefficient

3 a

a is the variable

3a is a term. | b is a term. | -5 is a term.

3a + b + - 5

-5 is a constant b/c there is no variable beside it.

Like terms have the same variable(s).

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

2x and 4x are like terms.

3y and -5y are like terms.

You can add like terms by adding their coefficients.

2x + 4x = 6x and 3y + (-5y) = -2y

So you can simplify 2x + 3y + 4x – 5y = 6x + - 2y

Typically, you do not write the coefficients 1 or -1.

1x = x

-1x = -x

Practice

Problem 1. 2x + 3y + 1z

a) What number is the coefficient of x? 2

b) What number is the coefficient of y? 3

c) What number is the coefficient of z? 1

Problem 2. 5x + -4y + 1z (hint: change the subtraction to plus the opposite)

a) What number is the coefficient of x? 5

b) What number is the coefficient of y? -4

c) What number is the coefficient of z? -1

Problem 3. Add like terms.

a) 6x + 2x 8x

b) 6x + -2x 4x

c) 5x + 1x 6x

d) 5x + -1x 4x

e) -4x + 5x 1x = x

f) 4x + -5x = -1x = -x

g) -5x + -3x -8x

h) –x + -x -2x

-1x + -1x

i) -7x + (+7x) 0x = 0

j) -3x + -4 + 2x + 6 -x + 2

k) 1x + -2 + -4x + -5 -3x + -7

1 + -4

-2 + -5

l) 4x + 1y + -2x + 3z 2x + y + 3z

m) 3x + -y + -8x + 2y -5x + y

3x + -1y + -8x + 2y