

Intro to college math: Chapter 1.7  
Algebraic Expressions

\* Similar terms: 2 terms with the same variable part (same variables raised to the same powers)

1. Simplify using the distributive property.

$$-2 - (x+4)$$

$$-2 - (x+4)$$

$$\underline{-2} - \underline{x} - \underline{4}$$

$$\boxed{-x - 6}$$

1<sup>st</sup> use distributive property: multiply the term outside the ( ) by both terms inside ( ).

Combine like terms

2. Simplify the following expression.

$$(5a + 6) - (2a + 1) =$$

$$(5a + 6) - (2a + 1)$$

$$\underline{(5a + 6)} - \underline{2a} - \underline{1}$$

$$\boxed{3a + 5}$$

1<sup>st</sup> use distributive property: multiply the term outside the ( ) by both terms inside ( ).

• Then combine like terms.

3. Simplify the following expression.

$$4(3y-3) + (5y-3)$$

$$4(3y-3) + (5y-3)$$

$$\underline{12y-12} + \underline{5y-3}$$

$$\boxed{17y-15}$$

← 1<sup>st</sup> use distributive property: multiply the term outside the ( ) by both terms inside ( ).

• Then combine like terms.

4. Simplify the following expression.

$$3(a-b) - 6(a-5)$$

$$3(a-b) - 6(a-5)$$

$$\underline{3a-18} - \underline{6a+30}$$

$$\boxed{-3a+12}$$

← 1<sup>st</sup> use distributive property: multiply the term outside the ( ) by both terms inside ( ).

\* Combine like terms

5. Simplify the following expression.

$$5(2a-2) - (a-2)$$

$$5(2a-2) - (a-2)$$

$$\underline{10a-10} - \underline{a+2}$$

$$\boxed{9a-8}$$

← 1<sup>st</sup> use distributive property: multiply the term outside the ( ) by both terms inside ( ).

Combine like terms

6. Simplify the following expression.

$$-8(3a+1) - 5(2a-1)$$

$$-8(3a+1) - 5(2a-1)$$

$$\underline{-24a} - \underline{8} - \underline{10a} + \underline{5}$$

$$\boxed{-34a - 3}$$

← 1<sup>st</sup> use distributive property: multiply the term outside the ( ) by both terms inside ( ).

← Combine like terms

7. Evaluate the following expressions when a is 3.

a)  $a^2 - 4a + 4$

$$3^2 - 4(3) + 4$$

$$9 - 12 + 4$$

$$\boxed{1}$$

← Replace each "a" with the number given.

← Then work out the problem or type into calculator.

b)  $(a-2)^2$

$$(3-2)^2$$

$$(1)^2$$

$$\boxed{1}$$

← Replace each "a" with the number given.

← Then work out the problem or type into calculator.

8. Evaluate the following expressions when x is -2 and y is 5.

a)  $(x+2y)^2$

$$(-2+2(5))^2$$

$$(-2+10)^2$$

$$(8)^2 = \boxed{64}$$

← Replace each "x" & "y" with the numbers given.

← Then work out the problem or type into calculator.

b)  $x^2 + 4xy + 4y^2$

$$(-2)^2 + 4(-2)(5) + 4(5)^2$$

$$4 - 40 + 100$$

$$\boxed{64}$$