

The Distributive Property More...

Name: _____ Class: _____ Date: _____

The expansion of the distributive property is using variables on the outside or even having two terms or more multiplied inside or outside the brackets. In this case, we multiply the coefficients between the two terms first and then multiply the variables each time.

Example: $-5x(3x + 6) = -15x^2 - 30$ - remember that you have to carry the negative sign and follow the multiplication rules for negative numbers (same $\rightarrow +$; different $\rightarrow -$)

Example 2: $-5x^2(-4x + 9) = 20x^3 - 45x^2$

Example 3: $(3x + 5)(-4x + 9) = -12 + 27x - 20x + 45$

Use these examples to simplify the follow expressions.

1) $2x(-7x - 8) + 5x^2(4x + 6)$

2) $8(-10x + 7) - 5(2x + 9)$

3) $-7x - 12(5x - 4x + 6)$

4) $-9x - 8 - (4x - 16)$

5) $(8x + 3)(-4x + 5)$

6) $-5x(-7x - 1) + 9x(-7x + 5)$

7) $10(7x - 10) - 5x^2(4x + 12)$

8) $3(4x + 5) - 2(3x + 7) + 4(2x - 8)$

$$9) \quad \frac{1}{2}(-8x^7 + 2x^9 - 6x^7 + 4x^9 - 10)$$

$$10) \quad 5(a^6 + 2a^5) - 6a(5a^4 - 7a^3)$$

$$11) \quad \frac{1}{3}(9x + 12) - (2x + 4)$$

$$12) \quad 0.25(16x - 4) - 2x(-2x + 2)$$

Consider the very different outcomes when we shift the negative signs and the brackets:

$$13) \quad (6x - 4) + (2x - 3)$$

$$14) \quad (6x + 4) + (2x - 3)$$

$$15) \quad -(6x - 4) - (2x - 3)$$

$$16) \quad -(6x + 4) - (2x - 3)$$

$$17) \quad (6x - 4)(2x - 3)$$

$$18) \quad -(6x - 4)(2x - 3)$$

$$19) \quad (6x + 4) - (2x - 3)$$

$$20) \quad (6x - 4) + (2x + 3)$$