

DO NOW

If asked to simplify the following, what would be done first?

$$5 - \underbrace{3(x-4)(x+3)}_{\text{FOIL}}$$

$$5 - \underbrace{3(\text{trinomial})}_{\text{distribute}}$$

6.4 Multiplying Polynomials - Day 3

When simplifying polynomial expressions, it is important to **THINK FIRST!!!**

What operations do you see?

Do you have monomials? Binomials? Trinomials?

Is FOIL required?

DON'T JUST GO FROM LEFT TO RIGHT!!!

PEMDAS

Examples: Discuss how you would go about simplifying the following expressions.

1. $(a-b)^2 - (a+b)^2$

$$\underbrace{(a-b)(a-b)}_{\substack{\uparrow \\ \text{Keep signs}}} - \underbrace{(a+b)(a+b)}_{\substack{\uparrow \\ \text{change signs}}}$$

Rewrite
FOIL

2. $(3x^5y^4)^3$

first

$$27x^{15}y^{12}$$

NO FOIL

3. $(-7cd^4)(-c^8d^3)$

multiply

$$7c^9d^7$$

NO FOIL

4. $4x(x-3) + (2x+3)(x-2)$

distribute FOIL distribute

$$(\text{binomial}) + (\text{trinomial})$$

↑ ↑
keep signs keep signs

5. $(6n^3)^2 + (4n^4)(2n^2)$

$$36n^6 + 8n^6$$

$$44n^6$$

NO FOIL

6. $6x - [2 - (8x - 3)]$

change signs

$$6x - [2 - 8x + 3]$$

Add in ()

$$6x - [5 - 8x]$$

change signs

$$6x - 5 + 8x$$

$$14x - 5$$

7. $(b^2 + 3b + 9) - (5b^2 - b + 3)$

↑ ↑
keep signs change signs

NO SUPERFOIL

8. $(c+4)(c-3) - (c-4)(c+1)$

FOIL

$$(\text{trinomial}) - (\text{trinomial})$$

↑ ↑
keep signs change signs

9. $(2d-5)(d+4)(d-1)$

FOIL

$$(\text{trinomial})(d-1)$$

Superfoil

HOMEWORK

Worksheet - HW 6.4 Simplify - Day 3