

DO NOW

$$a(x+4)$$

$$\boxed{ax+4a}$$

6.4 Multiplying Polynomials

The Do Now was $a(x+4)$

* distribute

let $a = x+3$

Then we have $(x+3)(x+4)$

$$(x+3)(x) + (x+3)(4)$$

$$x(x+3) + 4(x+3)$$

$$x(x) + x(3) + 4(x) + 4(3)$$

$$F + I + O + L$$

$$x^2 + 3x + 4x + 12$$

$$\boxed{x^2 + 7x + 12}$$

Distributive
Commutative
Distribute

FOIL - can ONLY be used to
MULTIPLY TWO BINOMIALS

F ← Firsts

O ← Outers

I ← Inneres

L ← Lasts

location in
reference to
the whole
problem

location in
the
individual
parentheses

Order of operations - multiply/divide

Examples:

1. $(y-2)(y+5)$

$$F + O + I + L$$

$$y(y) + y(5) - 2(y) - 2(5)$$

$$y^2 + 5y - 2y - 10$$

$$\boxed{y^2 + 3y - 10}$$

2. $(x-8)(x+2)$

$$x(x) + x(2) - 8(x) - 8(2)$$

$$x^2 + 2x - 8x - 16$$

$$\boxed{x^2 - 6x - 16}$$

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

$$12x^2 - 16x + 15x - 20$$

$$\boxed{12x^2 - x - 20}$$

4. $(2m+7)(m+3)$

$$2m^2 + 6m + 7m + 21$$

$$\boxed{2m^2 + 13m + 21}$$

5. $(c+6)(c-6)$

$$c^2 - 6c + 6c - 36$$

$$\boxed{c^2 - 36}$$

HOMEWORK

Worksheet - HW 6.4 Multiply Binomials