

Algebra 1 8.3

Multiply binomials using EWE

Multiply polynomials using EWE

distributive property

☺

EWE

☹

(FOIL = FAIL)

quadratic

standard form

X-factor

whiteboards

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

$$\begin{array}{r} 3x + 5 \\ 4x - 3 \end{array}$$

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$$-9x - 15$$

$$12x^2 \quad 20x$$

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$$12x^2 + 11x - 15$$

whiteboards

Guided Practice

1A.  $(3m + 4)(m + 5)$

$$\begin{array}{r} 3m + 4 \\ m + 5 \\ \hline 15m + 20 \\ 3m + 4m \\ \hline 3m^2 + 19m + 20 \end{array}$$

$$\begin{array}{r} (x^2 + 3x - 5)(x + 4) \\ x^2 + 3x - 5 \quad 3x \cdot x \\ \quad x + 4 \\ \hline 4x^2 + 12x - 20 \\ x^3 + 3x^2 - 5x \\ \hline x^3 + 7x^2 + 7x - 20 \end{array}$$

356 x 21  
356  
x 21  
-----  
21  
x 356  
-----

1B.  $(5y - 2)(y + 8)$

$$\begin{array}{r} 5y - 2 \\ y + 8 \\ \hline 5y^2 - 2y \quad 40y - 16 \\ \hline 5y^2 + 38y - 16 \end{array}$$

FAIL method: Use EWE

**Example 2 FOIL Method**

Find each product.

a.  $(2y - 7)(3y + 5)$

$$\begin{array}{r} 2y - 7 \\ 3y + 5 \\ \hline 10y - 35 \\ 6y^2 - 21y \\ \hline 6y^2 - 11y - 35 \end{array}$$

**b.**  $(4a - 5)(2a - 9)$

**Guided**Practice

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

**2B.**  $(4b - 5)(3b + 2)$

**2C.**  $(2y - 5)(y - 6)$

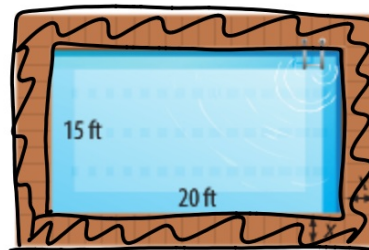
**2D.**  $(5a + 2)(3a - 4)$

FAIL

Real-World Example 3 FOIL Method

**SWIMMING POOL** A contractor is building a deck around a rectangular swimming pool. The deck is  $x$  feet from every side of the pool. Write an expression for the total area of the pool and deck.

**Understand** We need to find an expression for the total area of the pool and deck.



$$15 + 2x$$

$$20 + 2x$$

$$15 + 2x$$

$$40x + 4x^2$$

$$300 \quad 30x$$

$$300 + 70x + 4x^2 - 300$$

$$70x + 4x^2$$



**Example 4 The Distributive Property**

Find each product.

a.  $(6x + 5)(2x^2 - 3x - 5)$

WB  
8.3 prac  
1-4 all

51%

$$2x^2 - 3x - 5$$

$$6x + 5$$

$$\begin{array}{r} 10x^2 - 15x + 25 \\ 12x^3 - 18x^2 - 30x \end{array}$$

$$12x^3 - 8x^2 - 45x - 25$$

49%

$$6x + 5$$

$$2x^2 - 3x - 5$$

$$-30x - 25$$

$$-18x^2 - 15x$$

$$12x^3 / 10x^2$$

$$12x^3 - 8x^2 - 45x - 25$$

b.  $(2y^2 + 3y - 1)(3y^2 - 5y + 2)$

**Guided**Practice

**4A.**  $(3x - 5)(2x^2 + 7x - 8)$

**4B.**  $(m^2 + 2m - 3)(4m^2 - 7m + 5)$