

Algebra 1 8.3

Multiply binomials using EWE  
Multiply polynomials using EWE  
distributive property

EWE

(FOIL = FAIL)

quadratic  
standard form

X-factor

whiteboards

$$(x+3)(x+5)$$

Quiz 8.1-8.2

$$2x(x^2 + 3x + 6)$$

$$2x \cdot x^2 + 2x \cdot 3x + 2x \cdot 6$$

$$2x^3 + 6x^2 + 12x$$

How do we multiply (old school?)

27x8

43x27

$$\begin{array}{r} \del{36} \\ \times 25 \\ \hline 30 \\ 150 \\ 120 \\ 600 \\ \hline 900 \end{array}$$



$$\begin{array}{r} 27 \\ \times 8 \\ \hline 56 \\ 160 \\ \hline 216 \end{array}$$

$$\begin{array}{r} 43 \\ \times 27 \\ \hline 21 \\ 280 \\ 60 \\ 800 \\ \hline 1161 \end{array}$$

"each with each"



EWE

**Example 1** The Distributive Property

Find each product.

a.  $(2x + 3)$  $(x + 5)$

$$\begin{array}{r} 2x + 3 \\ \times x + 5 \\ \hline \end{array}$$

$$\begin{array}{r} x^2 \quad 10x \quad 15 \\ \quad 3x \\ \hline x^2 + 13x + 15 \end{array}$$

e w e

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

$$\begin{array}{r} x - 2 \\ 3x + 4 \\ \hline 3x^2 + 4x - 8 \\ \quad - 6x \\ \hline 3x^2 - 2x - 8 \end{array}$$

whiteboards

**Guided**Practice

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

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

FAIL method: Use EWE

### Example 2 FOIL Method

Find each product.

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

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



**Guided**Practice

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

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

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

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

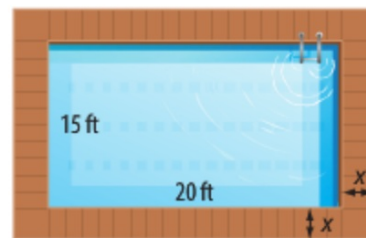
FAIL

**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.



**Example 4** The Distributive Property

Find each product.

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

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

**Guided**Practice

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

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