

Algebra 1 8.3

Multiply binomials using EWE

Multiply polynomials using EWE

distributive property

EWE

(FOIL = FAIL)

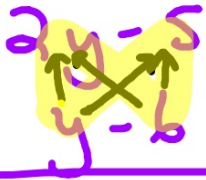
quadratic

standard form

X-factor

whiteboards

2c. $(2y - 5)(y - 6)$



$$\begin{array}{r} -12y + 30 \\ 2y^2 - 5y \\ \hline *2y^2 - 17y + 30 \end{array}$$

FOIL
.....
2D. $(5a + 2)(3a - 4)$
 $2y^2 - 12y - 5y + 30$



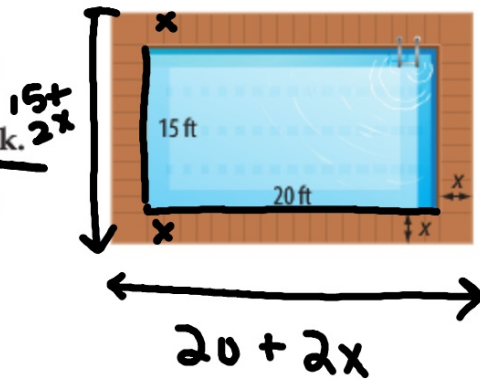
$$\begin{array}{r} -5y + 30 \\ 2y^2 - 12y \\ \hline 2y^2 - 17y + 30 \end{array}$$

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.



$$A = (\text{length})(\text{width})$$
$$= (20 + 2x)(15 + 2x)$$

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

$$\begin{array}{r} \cancel{20 + 2x} \\ \cancel{15 + 2x} \\ \hline 40x + 4x^2 \\ 300 + 30x \\ \hline 300 + 70x + 4x^2 \end{array} - 0$$

Example 4 The Distributive Property

Find each product.

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

FOIL

$$12x^2 - 30x + 10x^2 - 25$$

$$\begin{array}{r} 2x^2 - 3x - 5 \\ \times 6x + 5 \\ \hline \end{array}$$

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

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

$$\begin{array}{r} 2000 \\ \hline 3584 \end{array}$$

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

$$\begin{array}{r}
 3y^2 - 5y + 2 \\
 2y^2 + 3y - 1 \\
 \hline
 -3y^2 + 5y - 2 \\
 9y^3 - 15y^2 + 6y \\
 6y^4 - 10y^3 + 4y^2 \\
 \hline
 6y^4 - y^3 - 14y^2 + 11y - 2
 \end{array}$$

$$\begin{array}{r}
 2y^2 + 3y - 1 \\
 3y^2 - 5y + 2 \\
 \hline
 4y^2 + 6y - 2 \\
 -10y^3 - 15y^2 + 5y \\
 6y^4 + 9y^3 - 2y^2 \\
 \hline
 6y^4 - y^3 - 14y^2 + 11y - 2
 \end{array}$$

Guided Practice

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

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

$$2x^2 + 7x - 8$$

$$\underline{3x - 5}$$

$$6x^3 - 10x^2 - 35x + 40$$
$$6x^3 + 21x^2 - 24x$$

$$\underline{6x^3 + 11x^2 - 59x + 40}$$

