

Algebra 1

Lesson 9.2A
Multiply Polynomials

Warm-Up

Find the sum or difference.

(a) $(-x^2 + 3x - 8) + (4x^2 + 2x + 9)$

$3x^2 + 5x + 1$

(b) $(3x^3 + 2x - 8) - (2x^2 + 3x - 4)$ $+ -2x^2 - 3x + 4$

$3x^3 - 2x^2 - x - 4$

(c) $(4x^3 - 2x^2 + 1) + (x^3 - 7)$

$5x^3 - 2x^2 - 6$

Example 1. Multiplying a Monomial and a Polynomial

Find the product.

(a) $x(2x^2 + 3x - 8)$

$2x^3 + 3x^2 - 8x$

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

$6x^5 - 3x^4 + 12x^3 - 9x^2$

Try It!

Find the product.

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

$-6x^4 + 8x^3 - 10x^2 + 16x$

(b) $8x^3(x^2 + 2x - 3)$

$8x^5 + 16x^4 - 24x^3$

Example 2. Multiply a Binomial and a Binomial (Using a Table)

Find the product.

(a) $(x + 4)(x + 5)$

	x	4
x	x^2	$4x$
5	$5x$	20

$x^2 + 9x + 20$

(b) $(x - 2)(2x + 1)$

	x	-2
$2x$	$2x^2$	$-4x$
1	$1x$	-2

$2x^2 - 3x - 2$

Example 3. Multiply a Binomial and a Binomial (Using FOIL)

Find the product.

(a) $(a-3)(a+6)$

$$a^2 + 6a - 3a - 18$$

$$a^2 + 3a - 18$$

(b) $(2y+3)(y-2)$

$$2y^2 - 4y + 3y - 6$$

$$2y^2 - y - 6$$

Try It!

Find the product. You may use the tables (from Example 2) or FOIL (from Example 3).

(a) $(x+1)(x-8)$

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

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

(b) $(3x-2)(x-5)$

$$3x^2 - 15x - 2x + 10$$

$$3x^2 - 17x + 10$$

Example 4. More Multiplying Binomials

Find the product.

(a) $(2b+3)(3b-4)$

$$6b^2 - 8b + 9b - 12$$

$$6b^2 + b - 12$$

(b) $(4t-1)(2t-5)$

$$8t^2 - 20t - 2t + 5$$

$$8t^2 - 22t + 5$$

Try It!

Find the product.

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

$$12x^2 + 9x - 16x - 12$$

$$12x^2 - 7x - 12$$

(b) $(8k-3)(2k-5)$

$$16k^2 - 40k - 6k + 15$$

$$16k^2 - 46k + 15$$

Assignment

New: Pgs. 565 - 566 #3-14, 27-32

Review:

Write in scientific notation.

1. $(2.1 \times 10^6)(3.5 \times 10^9)$

2. $(5.4 \times 10^{-15})(1.1 \times 10^6)$

3. $\frac{5.4 \times 10^{-12}}{9.0 \times 10^4}$

4. $\frac{(2.1 \times 10^{18})(3.4 \times 10^{-4})}{1.7 \times 10^6}$