

9.3 - Multiplying Binomials 2

Vocabulary:

Binomial

FOIL

→ polynomial w/ 2 terms ex: $x+2$

First

Outer

Inner

Last

Review:

Distribute:

$$2x^1 (x^2 + 7x^1)$$
$$2x^3 + 14x^2$$

Find the GCF: $9x^4 + 12x^3 - 12x$

$$3x$$

Factor:

$$4x^3 + 16x^2$$
$$4x^2 (x + 4)$$

1 EXAMPLE Simplify $(2y - 3)(y + 2)$.

FOIL

$$2y \cdot y$$

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

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

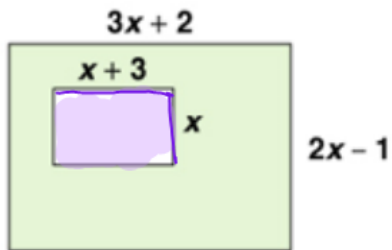
2 EXAMPLESimplify $(4x + 2)(3x - 6)$.

$$12x^2 - 24x + 6x - 12$$

$$12x^2 - 18x - 12$$

3 EXAMPLE

Find the area of the shaded region. Simplify.



Small

$$x(x+3)$$

$$x^2 + 3x$$

large - small

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

$$5x^2 - 2x - 2 \text{ units}^2$$

$$A = lw$$

$$= (3x+2)(2x-1)$$

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

large

$$6x^2 + x - 2$$

4 EXAMPLESimplify the product $(3x^2 - 2x + 3)(2x + 7)$.

$$\cancel{6x^3} - \cancel{4x^2} + \cancel{6x} + \cancel{21x^2} - \cancel{14x} + 21$$

$$6x^3 + 17x^2 - 8x + 21$$

Homework: pg. 507 #6, 10, 14 -16, 20, 22, 24, 61, 70, 72, 76

8, 18, 21, 28

$$\#6) h^2 + 7h + 12$$

$$10) 2y^2 - y - 15$$

$$14) m^2 - 15m + 54$$

$$15) 4b^2 + 10b - 6$$

$$16) 8w^2 + 42w + 10$$

$$76) 11k(1 + 7k^5)$$

$$20) x^2 + 5x + 6 + (x^2 + 3x)$$

$$8x + 6 \text{ units}^2$$

$$22) x^3 + 5x^2 - 35x + 9$$

$$24) 2g^3 - 3g^2 - 6g - 9$$

$$61) 20v^2 - 28v$$

$$70) x(3x - 11)$$

$$72) n^2(9 - n)$$