9-3 Multiplying Binomials

1 EXAMPLE Using the Distributive Property

Simplify $(2x + 3)(x + 4)$.

$2x(x+4) \quad +3(x+4)$

1 Simplify each product.

a. $(6h - 7)(2h + 3)$ **b.** $(5m + 2)(8m - 1)$

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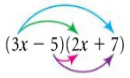
2 EXAMPLE Multiplying Using FOIL

Simplify $(3x - 5)(2x + 7)$.



First	Outer	Inner	Last
$= (3x)(2x)$	$+ (3x)(7)$	$- (5)(2x)$	$- (5)(7)$

$=$

$=$

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2 Simplify each product using FOIL.

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

c. $(3x + 4)(2x - 5)$ **d.** $(3x - 4)(2x - 5)$

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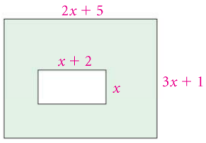
EXAMPLE Applying Multiplication of Polynomials

Multiple Choice Which expression best describes the area of the shaded region?

A $x^2 + 2x$ B $6x^2 + 17x + 5$

C $5x^2 + 15x + 5$ D $7x^2 + 9x + 5$



Large Rectangle - smaller rectangle = Shaded region

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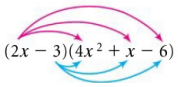
4 EXAMPLE Multiplying a Trinomial and a Binomial

Simplify the product $(4x^2 + x - 6)(2x - 3)$.

Distribute twice: 

$2x(4x^2 + x - 6) \quad -3(4x^2 + x - 6)$

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4 Simplify $(6n - 8)(2n^2 + n + 7)$

Try a) $(a - 4)(a^2 - 2a + 1)$

b) $(k + 8)(3k^2 - 5k + 7)$

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