

Find the product.

1) $x(3x^2 - 4x + 5)$

2) $(-x + 5)(2x - 4x^2)$

Warm Up

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

$2x$	3
$4x^2$	$6x$
-3	-9

$4x^2 - 9$

$(5x - 2)(5x - 2)$

$5x$	-2
$25x^2$	$-10x$
$-10x$	4

$25x^2 - 20x + 4$

Homework Questions?

Algebra 1.5		
② LAST UNIT/Experience Quadratic Equations	① CURRENT UNIT Polynomials & Factoring	③ NEXT UNIT/Experience Rational Equations
<p>⑧ Student Activities or Assignments</p> <ol style="list-style-type: none"> 1. 10.1 2. 10.2 3. 10.3 4. 10.4 5. 10.5 6. 10.6 7. 10.7 8. 10.8 	<p>⑤ UNIT MAP</p>	<p>⑥ UNIT RELATIONSHIPS</p> <p>Factor Solve Calculate Simplify</p>
<p>⑦ UNIT SELF-TEST QUESTIONS</p> <ol style="list-style-type: none"> 1. When adding & subtracting polynomials, how do you combine like terms? 2. How do you use distributive property, FOIL, and diagrams to multiply polynomials? 3. What is the method for factoring trinomials? 4. How is factoring & the Zero-Product Property used to solve polynomials? 		

10.3 Special Products of Polynomials

Goals: • Use special product patterns to multiply polynomials.

EQ: How do you solve $(3x - 2)^2$?

SPECIAL PRODUCT PATTERNS

Sum and Difference Pattern

$(a + b)(a - b) = a^2 - b^2$

Example: $(3x - 4)(3x + 4) = 9x^2 - 16$

	3x	4
3x	$9x^2$	$12x$
-4	$-12x$	-16

Square of a Binomial Pattern

$(a + b)^2 = a^2 + 2ab + b^2$

Example: $(x + 4)^2 = (x+4)(x+4) = x^2 + 8x + 16$

	x	4
x	x^2	$4x$
4	$4x$	16

$(a - b)^2 = a^2 - 2ab + b^2$

Example: $(2x - 6)^2 = (2x-6)(2x-6)$

	2x	-6
2x	$4x^2$	$-12x$
-6	$-12x$	36

$4x^2 - 24x + 36$

Example 1: Use the Sum and Difference PatternFind the product. $(9w + 3)(9w - 3)$

	$9w$	-3
$9w$	$81w^2$	$-27w$
3	$27w$	-9

$81w^2 + 0w - 9$

$81w^2 - 9$

Example 2: Use the Square of a Binomial Pattern

Find the product.

a) $(12x + 4)^2$ FOIL

$(12x + 4)(12x + 4)$

$144x^2 + 48x + 48x + 16$

$144x^2 + 96x + 16$

b) $(3k - 2m)^2$

	$3k$	$-2m$
$3k$	$9k^2$	$-6km$
$-2m$	$-6km$	$4m^2$

$9k^2 - 12km + 4m^2$

Try It

1) $(11m + 2)(11m - 2)$

	$11m$	-2
$11m$	$121m^2$	$-22m$
2	$22m$	-4

$$121m^2 - 4$$

2) $(9c - 1)^2$

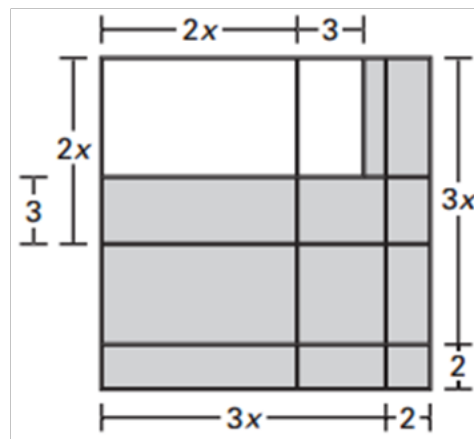
$$(9c - 1)(9c - 1)$$

	$9c$	-1
$9c$	$81c^2$	$-9c$
-1	$-9c$	1

$$81c^2 - 18c + 1$$

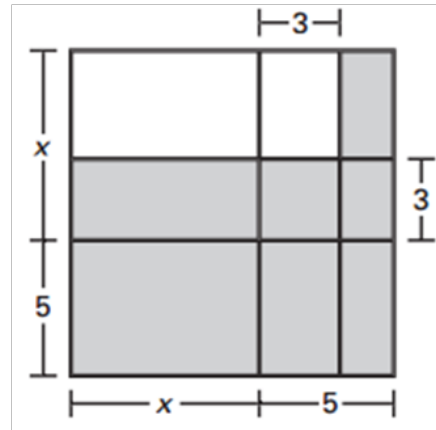
Example 3: Find the Area of a Figure

Geometry Link - Write an expression for the area of the shaded region.



Try It

3) Write an expression for the area of the shaded region.

**Summary**

EQ: How do you solve $(3x - 2)^2$?

$$(3x-2)(3x-2)$$

10.3 Homework

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