Name: _____ Date: _____

Lesson 7-2: Multiplying Polynomials

"I can multiply polynomial expressions."

Warm Up: *Review of the Properties of Exponents!*

Multiplying Polynomials: Rule: • Multiply coefficients • Multiply like variables: Keep the base and add the exponents.	**(1)** $(m)(m^8)$ **(2)** $(7b^2)(b^5)$
Power Rule for Exponents: Rule: • Raise coefficient to outside power • For variables: Keep the base and multiply the exponents.	**(3)** $(x^2)^3$ **(4)** $(5x^4)^2$
Distributive Property: Rule: $a(b + c) =$	**(5)** $3(6c + 3d)$ **(6)** $-5m(4m - 6n)$

Let's try it...

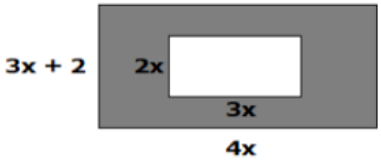
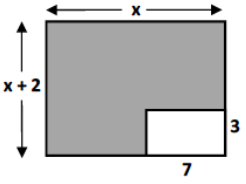
Directions: Simplify the following polynomials. **Answers must be in standard form.**

1. $a(4a + 3)$	**2.** $-c(11c + 4)$	**3.** $x(2x - 5)$

Distribute, then simplify the remaining expression. All answers must be written in standard form.

10. $w(3w + 2) + 5w$	**11.** $z(5z - 3) - 2z$	**12.** $y^2(-4y + 5) - 6y^2$

***Let's Practice*:** Simplify the following polynomials. Answers must be written in standard form.

Mild	1) $a(4a+3)$	2) $-c(11c+4)$	3) $x(2x-5)$
	4) $2y(y-4)$	5) $-3n(n^2+2n)$	6) $4h(3h-5)$
Medium	7) $3x(5x^2-x+4)$	8) $7c(c^3-2c^2+5)$	9) $-3n^2(-2n^2+2n+4)$
	10) $2x(3x^2+4)-3x^2$	11) $4a(5a^2-4)+9a$	12) $-2(4x^2+5x)+x(x^2+6x)$
Spicy	13) Find the area of the shaded region. ******Hint: Larger Area – Smaller Area*** 	14) Write an expression to represent the area of the shaded region. 	

Answers Scrambled:

$7c^4-14c^3+35c$	$15x^3-3x^2+12x$	$6m^2+6m-3$	$6x^3-3x^2+8x$	$6n^4-6n^3-12n^2$
$2x^2-5x$	$18b^2+26+8$	$5z^2-5z$	$-11c^2-4c$	$x^2+2x-21$
$12n^3+5n^2-19n$	$4a^2+3a$	$20a^3-7a$	$6x^2+8x$	x^3-2x^2-10x
$-3n^3-6n^2$	$-4y^3-y^2$	$12h^2-20h$	$3w^2+7w$	$2y^2-8$

Multiplying Polynomials Practice!

Directions: Simplify each expression. Use your answer to navigate through the maze. Show your work.