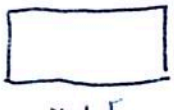
Algebra RH

Essential Question: How do we multiply polynomials?

Do Now: distance around an object — space an object / a figure covers

Find the perimeter and area of a rectangular garden whose dimensions are $x + 5$ and $2x - 1$.



$P = x+5+x+5+2x-1+2x-1$

$= 2(x+5)+2(2x-1)$

$= 2x+10+4x-2$

$= 6x+8$ units

$A = l \cdot w$

$(x+5)(2x-1)$

$2x^2 - x + 10x - 5$

$2x^2 + 9x - 5$ units^2

Multiplying Polynomials:
Multiply the second polynomial by each term of the first polynomial.

1. $-4x^2(3x^2 + 2x^1 - 6)$

$-12x^4 - 8x^3 + 24x^2$

2. $(x + 3)(2x + 5)$

$2x^2 + 5x + 6x + 15$

$2x^2 + 11x + 15$

3. $(4y - 1)(3y - 1)$

$12y^2 - 4y - 3y + 1$

$12y^2 - 7y + 1$

4. $(q - 9)(2q^2 + 3q + 1)$

$2q^3 + 3q^2 + q$

$-18q^2 - 27q - 9$

$2q^3 - 15q^2 - 26q - 9$

5. $(5 + 3y - y^2)(y - 2)$

$5y - 10 + 3y^2 - 6y - y^3 + 2y^2$

$-y^3 + 5y^2 - y - 10$

6. $(6x^3 - 2x^2 + x - 8)(5x - 6 + 3x^2)$

	$6x^3$	$-2x^2$	$+x^1$	-8
$5x^1$	$30x^4$	$-10x^3$	$5x^2$	$-40x$
-6	$-36x^3$	$+12x^2$	$-6x$	$+48$
$3x^2$	$18x^5$	$-6x^4$	$3x^3$	$-24x^2$

$18x^5 + 24x^4 - 43x^3 - 7x^2 - 46x + 48$

Combining Operations

7. $4x(x + 5) + 2x(3x - 1)$

$4x^2 + 20x + 6x^2 - 2x$

$10x^2 + 18x$

8. $(x + 5)^2 - (x + 2)$

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

$x^2 + 10x + 25 - x - 2$

$x^2 + 9x + 23$

9. $(x + 1)(x - 1) - (x + 2)(x - 2)$

$x^2 - 2x + 2x - 4$

$x^2 - 1 - (x^2 - 4)$

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

3

10. $5x(x - 4)^2$

$5x(x-4)(x-4)$

$5x(x^2 - 4x - 4x + 16)$

$5x(x^2 - 8x + 16)$

$5x^3 - 40x^2 + 80x$

$5x(x-4)(x-4)$

$(5x^2 - 20x)(x-4)$

$5x^3 - 20x^2 - 20x^2 + 80x$

$5x^3 - 40x^2 + 80x$