Multiplying Polynomials

* Multiply coefficients like normal
* Add the exponents.

EX:

$3x^1 \cdot 4x^1 = 12x^2$

$5x^2 \cdot 2x^3 = 10x^5$

$-6x \cdot 7x^4 = -42x^5$

$3x \cdot 5y = 15xy$

Multiplying Polynomial Notes

Name_____ Class Period_____

Multiplying by a Monomial: [*Distribute*]

1. $3x^2(4x + 7)$

$12x^3 + 21x^2$

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

$6x^7 - 16x^6$

① First
Outside
Inside
Last

② Box Method

Multiplying a Binomial times a Binomial:

1. $(2x + 4)(x + 6)$

$2x^2 + 12x + 4x + 24$

$2x^2 + 16x + 24$

	2x	+4
x	$2x^2$	4x
+6	12x	24

$2x^2 + 16x + 24$

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

$9x^2 + 15x + 15x + 25$

$9x^2 + 30x + 25$

	3x	+5
3x	$9x^2$	15x
+5	15x	25

$9x^2 + 30x + 25$

Multiplying Binomials times Trinomials or Trinomials times Trinomials:

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

	$2x^2$	-3x	-1
4x	$8x^3$	$-12x^2$	-4x
+7	$14x^2$	-21x	-7

$8x^3 + 2x^2 - 25x - 7$

2. $(2x^2 + 5x + 1)(4x^2 - 6x - 7)$