4.4B More Mulitplying Binomials & Factoring Complex Trinomials

A. Multiplying Two Binomials

1. $(2x+3y)(4x-y)$

$= 8x^2 + 10xy - 3y^2$

	$2x$	$3y$
$4x$	$8x^2$	$12xy$
$-y$	$-2xy$	$-3y^2$

2. $(x-3y)(5x-3y)$

Look for patterns!!!

$= 5x^2 - 3xy - 15xy + 9y^2$

$= 5x^2 - 18xy + 9y^2$

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

$= 15x^4 + 7x^2 - 2$

	$5x^2$	-1
$3x^2$	$15x^4$	$-3x^2$
2	$10x^2$	-2

Look for patterns!!!

4. $(3a-4b)(5a-b)$

$= 15a^2 - 3ab - 20ab + 4b^2$

$= 15a^2 - 23ab + 4b^2$

5. $(3xy+2z)(2xy-5z)$

6. $(5x+2y)(3x+2y)$

7. $(3m+2n)(2m+5n)$

Look for patterns!!!

8. $(3x-4ab)(2x+5ab)$

$= 6x^2 + 15abx - 8abx - 20a^2b^2$

$= 6x^2 + 7abx - 20a^2b^2$

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B. Factoring Complex Trinomials

**complex trinomials have a leading coefficient that is NOT ="1".

1. $3x^2 - 5xy + 2y^2$

$= (3x-2y)(x-y)$

	x	$-y$
$3x$	$3x^2$	$-3xy$
$-2y$	$-2xy$	$2y^2$

M^{AC} 6, A -5, N $-3, -2$

2. $8a^2 + 6ab + b^2$

$= 8a^2 + 2ab + 4ab + b^2$

$= 2a(4a+b) + b(4a+b)$

$= (4a+b)(2a+b)$

M^{AC} 8, A 6, N 2, 4

3. $10x^4 + x^2 - 3$

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

	$2x^2$	-1
$5x^2$	$10x^4$	$-5x^2$
3	$6x^2$	-3

M^{AC} -30, A 1, N $-5, 6$

4. $6x^2 - 17xy + 5y^2$

$= 6x^2 - 2xy - 15xy + 5y^2$

$= 2x(3x-y) - 5y(3x-y)$

$= (3x-y)(2x-5y)$

M^{AC} 30, A -17, N $-2, -15$

5. $6x^2 - xy - y^2$

6. $12m^2 - 16mn - 3n^2$

7. $x^2 + xy - 6y^2$

Look for patterns!!!

8. $6x^2y^2 - xyz - 2z^2$

9. $2 - 11x + 12x^2$

$= 12x^2 - 11x + 2$

	$3x$	-2
$4x$	$12x^2$	$-8x$
-1	$-3x$	2

M^{AC} 24, A -11, N $-8, -3$

$= (4x-1)(3x-2)$

10. $3x^2 + 2xy - 8y^2$

$= 3x^2 + 6xy - 4xy - 8y^2$

$= 3x(x+2y) - 4y(x+2y)$

$= (x+2y)(3x-4y)$

Look for patterns!!!

M^{AC} -24, A 2, N $6, -4$

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