4.4A Mulitplying Binomials & Factoring Complex Trinomials

A. Multiplying Two Binomials using Box Method

Look for patterns!!!

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

$= 6x^2 + 17x + 5$

	$2x$	5
$3x$	$6x^2$	$15x$
1	$2x$	5

2. $(5x+2)(3x+4)$

$= 15x^2 + 20x + 6x + 8$

$= 15x^2 + 26x + 8$

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

$= 2x^2 + 13x - 7$

	x	7
$2x$	$2x^2$	$14x$
-1	$-x$	-7

Look for patterns!!!

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

$= 8x^2 + 4x - 10x - 5$

$= 8x^2 - 6x - 5$

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

$= 3x^2 - 7x - 6$

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

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

$= 10x^2 + 11x - 6$

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

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

Look for patterns!!!

9. $(3x-1)(x+3)$

10. $(5x+2)(x-3)$

B. Factoring Complex Trinomials

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

1. $3x^2 - 10x - 8$

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

-24

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

M -24
A -10
N $2, -12$

2. $10x^2 + 3x - 1$

$= 10x^2 - 2x + 5x - 1$
$= 2x(5x-1) + 1(5x-1)$
$= (5x-1)(2x+1)$

Look for patterns!!!

M -10
A 3
N $-2, 5$

3. $2x^2 + 7x + 3$

$= (x+3)(2x+1)$

	$2x$	1
x	$2x^2$	$1x$
3	$6x$	3

Look for patterns!!!

M 6
A 7
N 1, 6

4. $15x^2 - 11x + 2$

$= 15x^2 - 5x - 6x + 2$
$= 5x(3x-1) - 2(3x-1)$
$= (3x-1)(5x-2)$

M 30
A -11
N $-5, -6$

5. $10x^2 + 19x - 15$

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

	$5x$	-3
$2x$	$10x^2$	$-6x$
5	$25x$	-15

M -150
A 19
N $-6, 25$

6. $2x^2 - 3x + 1$

7. $14x^2 - 19x - 3$

Look for patterns!!!

8. $9x^2 - 24x + 16$

$= 9x^2 - 12x - 12x + 16$
$= 3x(3x-4) - 4(3x-4)$
$= (3x-4)(3x-4)$
$= (3x-4)^2$

* Perfect Square! *
Same two terms

9. $3x^2 - 4x - 7$

10. $10x^2 + 3x - 1$

Look for patterns!!!
