4.4A Mulitplying Binomials & Factoring Complex Trinomials

A. Multiplying Two Binomials using Box Method

1. (3x+1)(2x+5)= $6x^2 + 17x + 5$

	3~	1
2x	6×2	2×
5	157	5

2. (5x+2)(3x+4)= $15x^2 + 26x + 8$

57		2
34	1512	e^{\times}
4	S₀ X	8

Look for patterns!!!

- 3. (2x-1)(x+7) $= 2x^{2} + 19x - 7$ 2x - 1x - 1
- $\frac{4x}{2} = \frac{4}{8x^2} 6x$

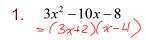
4. (4x-5)(2x+1)= $8x^2 - 6x - 5$

- 5. (x-3)(3x+2) $= 7x^{2} 7x 6$ $\times 7$ $? \times 3x^{2} 9x$ + 2 2x 6
- 6. (2x+3)(5x-2) $= |0x^{2}+1|x-6$ 2 + 3 $5x |0x^{2}| |5x$ -2 |-4x| |-6
- 7. (3x-1)(5x-2) $= (5x^2 11x + 2)$ $\Rightarrow \times (5x^2 5x + 2)$ $\Rightarrow \times (5x^2 5x + 2)$ $\Rightarrow \times (5x^2 5x + 2)$
- 9. (3x-1)(x+3) $= 3 \times \cancel{-} + 8 \times -3$ $3 \times - \cancel{-} \times \cancel{$
- 10. (5x+2)(x-3) $= 5x^2 - 13x - 6$ 5x + 2 x + 2 x + 3-3 = 45x - 6



B. Factoring Complex Trinomials

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



$$\begin{array}{c|cccc}
 & & & & & & & & & & & \\
3\chi & & & & & & & & & \\
2 & & & & & & & & \\
2 & & & & & & & & \\
\end{array}$$

4.

$$10x^{2} + 3x - 1$$

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

$$5x - 1$$

$$10x^{2} - 2x$$

=(5x-2)(3x-1)



$$N - 2 / 5$$
 $15x^2 - 11x + 2$

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

$$\begin{array}{c|cc} x & 3 \\ 2x & 2x^2 & 6x \\ 1 & x & 3 \end{array}$$



N 6,1

M - 42

-21,2

$$3x -1$$

$$5x | 15x^2 - 5x$$

$$-2 - bx | 2$$

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

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

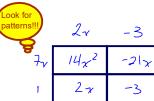
$$2x$$
 5
 $5x$ $10x^2$ $25x$
 -3 $-6x$ -15

6.
$$2x^2 - 3x + 1$$
$$= (2x - 1) \times x - 1$$

$$M - 150$$
 $\chi - 1$
 $M - 19$ $2\chi 2\chi^{2} - 2\chi$
 $N 25, -6 - 1 - 1$

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

= $(7_{x+1})(2_{x-3})$



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

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

$$= (3x - 4)^{2}$$

	3~	- 4
3×	9x2	-12~
- 4	-12x	16

9.
$$3x^2 - 4x - 7$$
$$= (\chi + 1)(3\chi - 7)$$

$$3x - 7 M - 21$$

 $y 3x^2 - 7x A - 4$
 $1 3x - 7 N - 7_{13}$

10.
$$10x^2 + 3x - 1$$
$$= (5x - 1)(2x + 1)$$

