Algebra 1 CP
Period(s): _____

Date: _____
Day #: 4
Section: 8-3a

LESSON PLAN

A. Warm Up:

CST/CAHSEE: A1 10.0

1) The product of $(x+7)(x+3)$ is:

(A) x^2+21

(B) $x^2+10x+21$

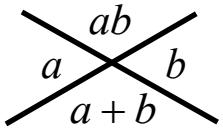
(C) $2x+10$

(D) $x^2+3x+7x+21$

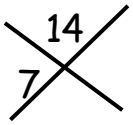
Review:

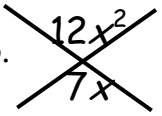
2) Solve each diamond problem.

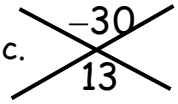
Remember **product**



sum

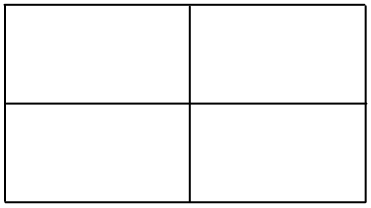
a. 

b. 

c. 

Current:

3) Multiply $(2x+3)(x+5)$ using a generic rectangle.



Current:

4) Multiply $(x+4)(x+6)$ using a generic rectangle.

B. Homework Review:

C. Notes: **Factoring $x^2 + bx + c$ Trinomials**

Objectives: Factor $x^2 + bx + c$ using a generic rectangle . CA Std. 11.0

Practice

Lets look at the problems from the warm up.

$(x+7)(x+3)$ $(2x+3)(x+5)$ $(x+4)(x+6)$

	x	$+7$
x	x^2	$7x$
$+3$	$3x$	21

	$2x$	$+3$
x	$2x^2$	$3x$
$+5$	$10x$	15

	x	$+4$
x	x^2	$4x$
$+3$	$6x$	24

$\therefore\ x^2+10x+21$ $\therefore\ 2x^2+13x+15$ $\therefore\ x^2+10x+24$

"Did anybody notice the products of the diagonals were equal in all 3 examples?"

x^2	$7x$
$3x$	21

both are $21x^2$

$2x^2$	$3x$
$10x$	15

both are $30x^2$

x^2	$4x$
$6x$	24

both are $24x^2$

This will always be true. We can use this fact to help us factor the trinomials using generic rectangles.

Ex. 1 Factor $x^2 + 7x + 10$

x^2 always went here.

x^2	
	10

Constant always went here.

The product of the diagonal is $10x^2$. The product of the other diagonal must also be $10x^2$ and the sum of the factors must equal $7x$. I can use a diamond to help me find the factors.

x^2	
	10

$10x^2$

$5x$ $2x$

$7x$

"What has a product of $10x^2$ and a sum of $7x$?" **[5x and 2x]**

Continued on next page . .

	GCF of top row → x: x^2, $5x$; $+2$: $2x$, 10 (columns: x, $+5$) — What is the GCF of the top row? [x] $\therefore x^2+7x+10=(x+2)(x+5)$ "Let's do another!" **Ex. 2** Factor x^2+5x+6 GCF of top row → x: x^2, $3x$; $+2$: $2x$, 6 (columns: x, $+3$) $6x^2$ → $3x$, $2x$; $5x$ — "What has a product of $6x^2$ and a sum of $5x$?" [**3x and 2x**] $\therefore x^2+5x+6=(x+2)(x+3)$ "What if there are two variables?" **Ex. 3** Factor $a^2+7ab+10b^2$ GCF of top row → a: a^2, $2ab$; $+5b$: $5ab$, $10b^2$ (columns: a, $+2b$) $10a^2b^2$ → $2ab$, $5ab$; $7ab$ $\therefore a^2+7ab+10b^2=(a+2b)(a+5b)$ "What if you have negative terms?" **Ex. 4** Factor $x^2-8x-20$ GCF of top row → x: x^2, $-10x$; $+2$: $+2x$, -20 (columns: x, -10) $-20x^2$ → $-10x$, $+2x$; $-8x$ $\therefore x^2-8x-20=(x+2)(x-10)$ **You Try:** **a)** Factor x^2+6x+8 **b)** Factor $a^2+7ab+10b^2$
Practice	

Reflection: Can all trinomials be factored? Are there other methods for factoring?

D. Homework: p 500; 20-28 – you must use generic rectangles and diamonds.