

Thursday Jan. 11, 2018

## Factoring Trinomials ~ 3 terms

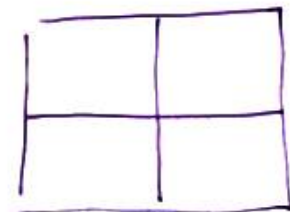
$$\begin{array}{ccc} a & b & c \\ x^2 + 7x + 10 & (x + 5) & \\ (x + 5)(x + 2) & \begin{array}{|c|c|} \hline x & \\ \hline + & \\ \hline 2 & \\ \hline \end{array} \begin{array}{|c|c|} \hline x^2 & 5x \\ \hline 2x & 10 \\ \hline \end{array} & \begin{array}{l} a = 1 \\ b = 7 \\ c = 10 \\ 3 + 4 = 7 \\ 5 + 2 = 7 \\ 1 + 6 = 7 \end{array} \end{array}$$

$$\begin{array}{ccc} x^2 - 8x + 7 & (x - 1) & \\ (x - 1)(x - 7) & \begin{array}{|c|c|} \hline x & \\ \hline -7 & \\ \hline \end{array} \begin{array}{|c|c|} \hline x^2 & -1x \\ \hline -7x & 7 \\ \hline \end{array} & \begin{array}{l} a = 1 \\ b = -8 \\ c = 7 \\ -4 + (-4) \\ -5 + (-3) \\ -6 + (-2) \\ -3 - (-11) \\ -7 - 1 \end{array} \end{array}$$

To factor a trinomial ~

1. Name terms  $a, b, c$   
 $x^2 \quad x \quad \hookrightarrow$  constant

2. Draw the box



List terms  
find addends to  
b coefficient.

3. Find the addends  
that multiply to  $a \times c$

# Solve Equations by factoring

$$x^2 + 6x = 7$$

$$x^2 + 6x - 7 = 0$$

$$(x-1)(x+7) = 0$$

$$x-1=0 \text{ or } x+7=0$$

$$+1 \quad +1$$

$$\text{or } x+7=0$$

$$-7 \quad -7$$

$$x=1 \text{ or } x=-7$$

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

1. Make it = to zero

2. Factor  $x^2 + 6x - 7$

$$a = 1$$

$$b = 6$$

$$c = -7$$

multiply to  $-7$

add to  $+6$

$$-1 + 7 = 6$$

$$-7 + 1 \neq 6$$

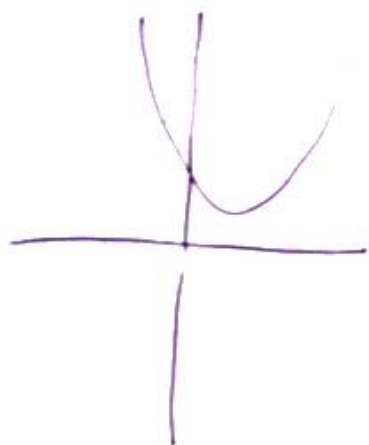
$$x^2 - 4x + 3 = 0$$

$$(x-1)(x-3) = 0$$

$$x-1=0 \quad x-3=0$$

$$x=1 \quad x=3$$

	$x$	$-1$
$x^2$	$-1x$	
$-3x$	$3$	



p. 20 #1

$$x^2 + 4x + 3$$

$$(x+1)(x+3)$$

$$a = 1$$

$$b = 4$$

$$c = 3$$

multiply to 3  
add to +4

	$x$	$+1$
$x^2$	$1x$	
$3x$	$3$	

Finis 1-6 on

p. 20

p. 21 3-6

p. 21 #2

$$y^2 - 5y + 4 = 0$$

$$(y-4)(y-1) = 0$$

$$y=4 \text{ or } y=1$$

$y^2$	$-4y$
$-1y$	$4$

$$a = 1$$

$$b = -5$$

$$c = 4$$

add to  $-5$

multiply to 4

$$-4(-1)$$