

AGENDA

- 1) Take out HW to be checked
("*Graphing from Factored Form*" worksheet)
- 2) DO NOW
- 3) HW questions??
- 4) Factoring
 - Method 1) GCF
 - Method 2) Target Sum, Target Product

HW: "518 Quadratic Graphing" worksheet

DO NOW

A) Use the FOIL method or the Box method to Solve the following:

1) $6x(2x + 3)$

2) $7(-5x - 8)$

3) $(2n + 2)(6n + 1)$

4) $(4n + 1)(2n + 8)$

B) Try to undo the following equations back into two pieces like the section above:

1) $x^2 - 3x$

2) $x^2 + 4x + 4$

$$\begin{array}{c} \xrightarrow{\text{Multiplying}} \\ (x - 7)(x + 2) = x^2 - 5x - 14 \\ \xleftarrow{\hspace{10em}} \end{array}$$

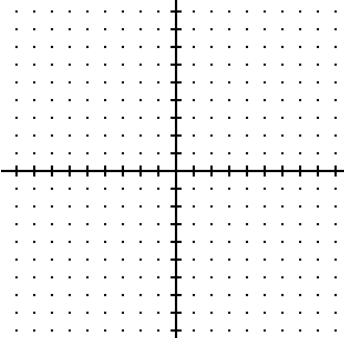
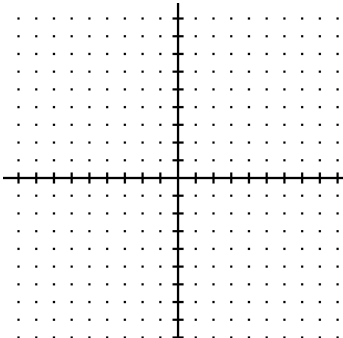
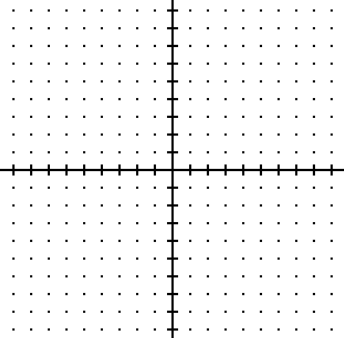
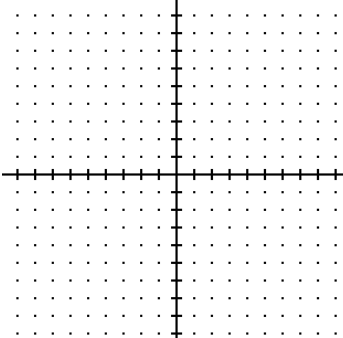
FACTORING:

Factoring *undoes* the process of multiplied polynomials.

What do you do if you are given an equation in **standard form** and you want to find the **zeros**?

Method 1)

Look for the Greatest Common Factor (GCF) to "un-distribute"

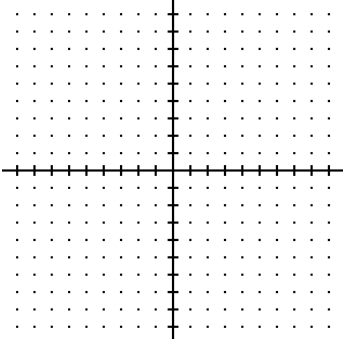
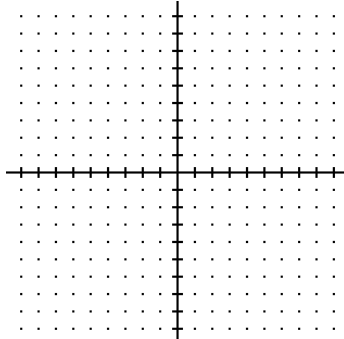
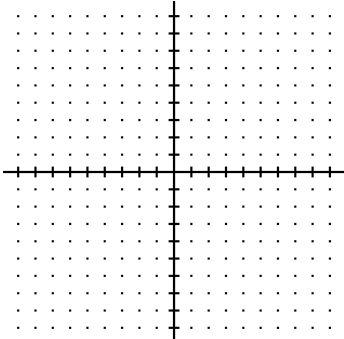
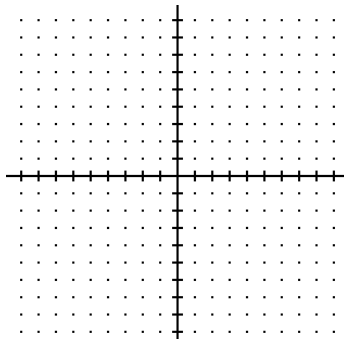
<p>a) $y = x^2 + 3x$</p> 	<p>c) $y = 2x^2 + 2x$</p> 
<p>b) $y = 3x^2 + 6x$</p> 	<p>d) $y = -x^2 - 4x$</p> 

What do you do if you are given an equation in **standard form** and you want to find the **zeros**?

Method 2) Quadratic Trinomials : $ax^2 + bx + c$ (when $a = 1$)

***Target Product:** 2 numbers that **MULTIPLY** to c

***Target Sum:** 2 numbers that **ADD** to b

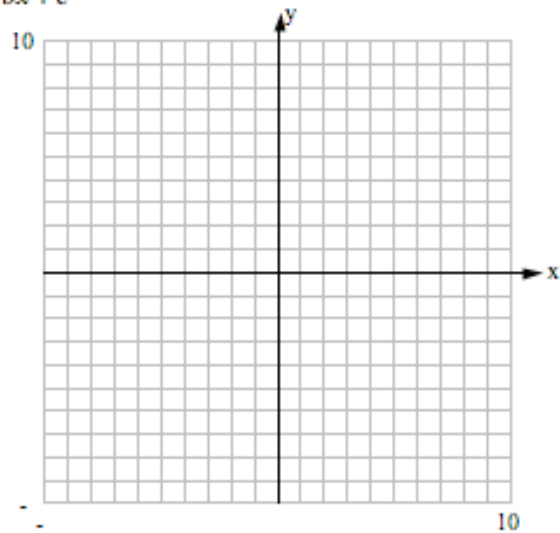
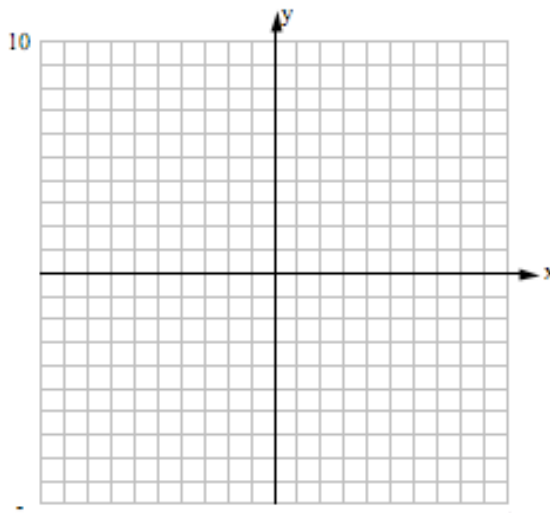
<p>a) $y = x^2 + 8x + 7$</p> 	<p>c) $y = x^2 - 11x + 10$</p> 
<p>b) $y = x^2 - 6x + 5$</p> 	<p>d) $y = -x^2 - 4x - 4$</p> 

HW: "518 Quadratic Graphing" worksheet

Name: _____

518 Quadratic Graphing

Graphing quadratics in standard form, $f(x) = ax^2 + bx + c$



Graph 1 and 2 on the grids above.

1) $f(x) = x^2 + 4x - 12$

x	-6	-4	-2	0	2
$f(x)$					

Axis of symmetry: _____

Vertex: _____

Max or Min (Circle one)

Roots: _____ and _____

2) $g(x) = -x^2 + 6x + 7$

x	-1	0	3	6	7
$g(x)$					

Axis of symmetry: _____

Vertex: _____

Max or Min (Circle one)

Roots: _____ and _____

Standard form: $ax^2 + bx + c$

Ex)

Given $f(x) = 4x^2 + 5x - 2$ then $a = 4$, $b = 5$ and $c = -2$. Because a is positive, the parabola opens UP.

Ex)

Given $f(x) = -(x - 2)(x + 3)$, expand into standard form: $f(x) = -(x^2 + x - 6) = -x^2 - x + 6$ then $a = -1$, $b = -1$ and $c = 6$. Because a is negative, the parabola opens DOWN.

#3-6 find the a , b , c and circle correct choice.

3. $g(x) = (2x - 1)(x + 3)$

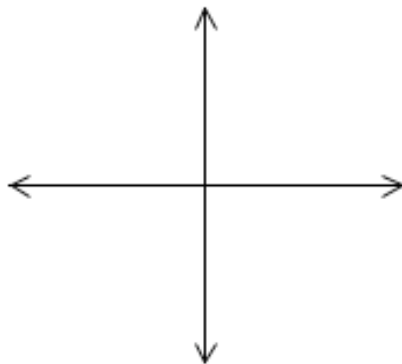
$a = \underline{\hspace{1cm}}$; $b = \underline{\hspace{1cm}}$; $c = \underline{\hspace{1cm}}$; Opens up or down

5. $f(x) = 8x - 3 - 7x^2$

$a = \underline{\hspace{1cm}}$; $b = \underline{\hspace{1cm}}$; $c = \underline{\hspace{1cm}}$; Opens up or down

7. Sketch a quadratic

a) with a **minimum** and only **no** root.



4. $g(x) = -(x + 1)^2 + 7$

$a = \underline{\hspace{1cm}}$; $b = \underline{\hspace{1cm}}$; $c = \underline{\hspace{1cm}}$; Has max or min.

6. $f(x) = 3(x - 2)^2 - 1$

$a = \underline{\hspace{1cm}}$; $b = \underline{\hspace{1cm}}$; $c = \underline{\hspace{1cm}}$; Has max or min

b) a **maximum** with **one negative** and **one positive** root.

