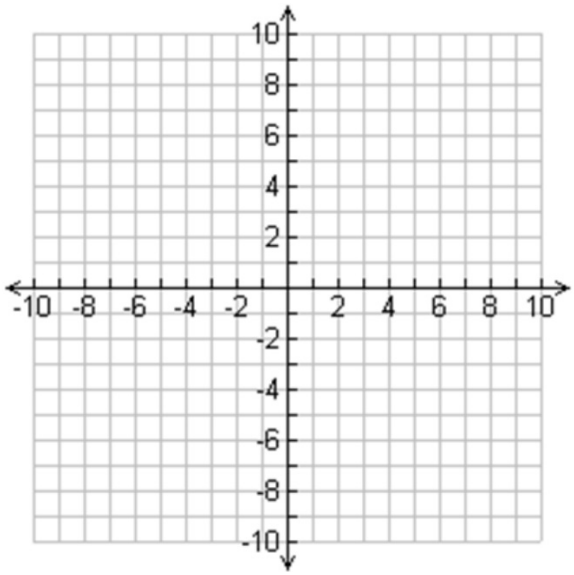
Bellwork

Graph the function identifying Key Elements:

1. $5x^2 - 25x - 70$



Graphing by Completing the Square

Procedure:

Step 1: Divide the x-terms by a...
Have... $a(x^2 + (b/a)x) + c$

Step 2: Divide the (b/a) by 2 and square it.

Step 3: Add the result from Step 2 inside the ( ) behind the (b/a)x.

Step 3: Subtract the result from Step 2 times a, after the c.
Have... $a(x^2 + (b/a)x + (b/2a)^2) + c - a(b/2a)^2$

Step 4: Factor the expression to be... **$a(x + (b/2a))^2 + \#$**

Step 5: Vertex is at (-b/2a, #)

Step 6: Create a chart around the vertex again as we have in the introduction to graphing quadratics.

Example

Graph by using Completing the Square:

1. $2x^2 + 4x + 7$