Name:_____   Class #:_____

Lesson 6: Solve quadratic equations using factoring
- □ The AC Method to factoring: $ax^2 + bx + c$
- □ Factoring Perfect Square Trinomials
- □ Factoring a Difference of Squares
- □ Algebraic and graphical approach to solving $ax^2 + bx + c = 0$

Solve each of the following equations by factoring. Show all steps.

1. $m^2 - 81 = 0$

2. $2x^2 + 5x - 4 = 8$

3. $-4a^2 + 49 = 0$

4. $2x^2 - 8x - 1 = 3 - x$

Graphical Technique to solve an algebraic equation

      To find the solution to algebraic equations using a graphical technique, we use the following five step program for salvation:

Step 1:	Graph the function y_1 on the left-hand side of the equals sign.
Step 2:	Graph the function y_2 on the right-hand side of the equals sign.
Step 3:	Find the point(s) of intersection between the graphs of the two functions.
Step 4:	Write each point of intersection as an ordered pair in the form: (x, y)
Step 5:	Set the variable from the original algebraic equation equal to the 1st coordinate of each point of intersection. These "x"-values are the solution(s) to the algebraic equation.

5. Consider the equation $2x^2 - 8x - 1 = 3 - x$.

   A. Identify and graph the function on the left-hand side of the equals sign:_____

   B. Identify and graph the function on the right hand side of the equals sign:_____

   C. Find and label the points of intersection on the graph below. Make sure to write each point of intersection as an ordered pair in the form (x, y).

   D. Identify the x – value for each point of intersection.

   E. Identify the solution(s) to this equation:_____

x	Left-hand side:	Right-hand side:
-2		
-1		
-0.5		
0		
1		
2		
3		
4		
5		
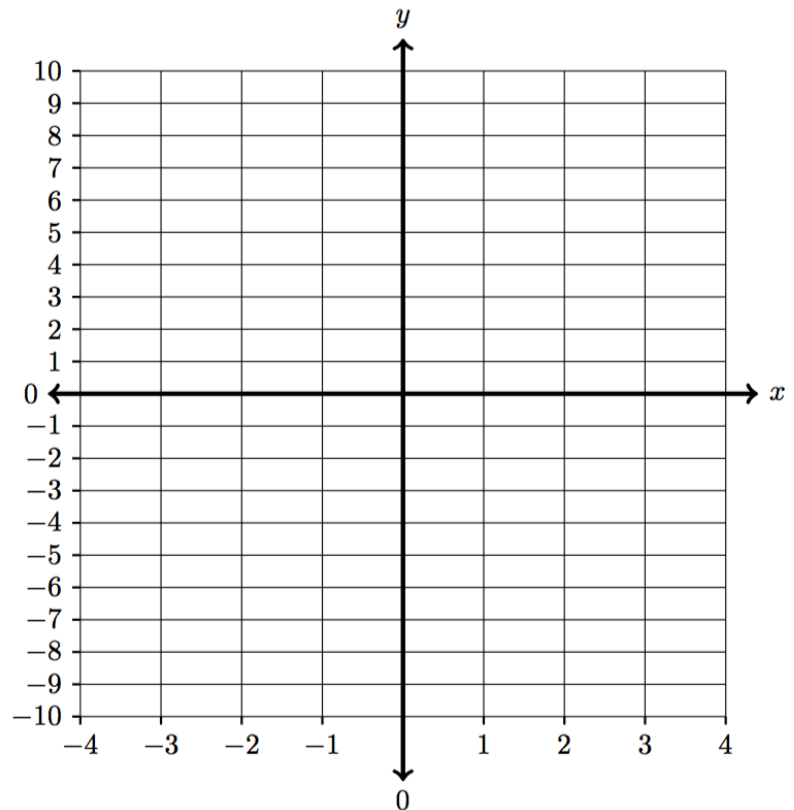
Name:_____   Class #:_____

6.   Consider the equation $2x^2 + 5x - 4 = 8$.

A. Identify and graph the function on the left-hand side of the equals sign:_____

B. Identify and graph the function on the right hand side of the equals sign:_____

F. Find and label the points of intersection on the graph below. Make sure to write each point of intersection as an ordered pair in the form (x, y).

C. Identify the x – value for each point of intersection.

D. Identify the solution(s) to this equation:_____

x	Left-hand side:	Right-hand side:
-5		
-4		
-3		
-2		
-1		
0		
1		
1.5		
2		