

Name: _____

Class #: _____

LESSON 17: The Quadratic Formula

- Quadratic equation in standard form: $ax^2 + bx + c = 0$
- Quadratic formula for the solution of a quadratic equation in standard form

$$x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a} \quad \text{OR} \quad x_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

- To solve a Quadratic Equation (p. 755)
 - Connecting the Concepts: The Four Methods to Solve Quadratic Equations
-

Problem 1A – 1C: Solve the following quadratic equation using three different methods:

$$x^2 = x + 6$$

1A. Method 1: Solve by factoring : $x^2 = x + 6$

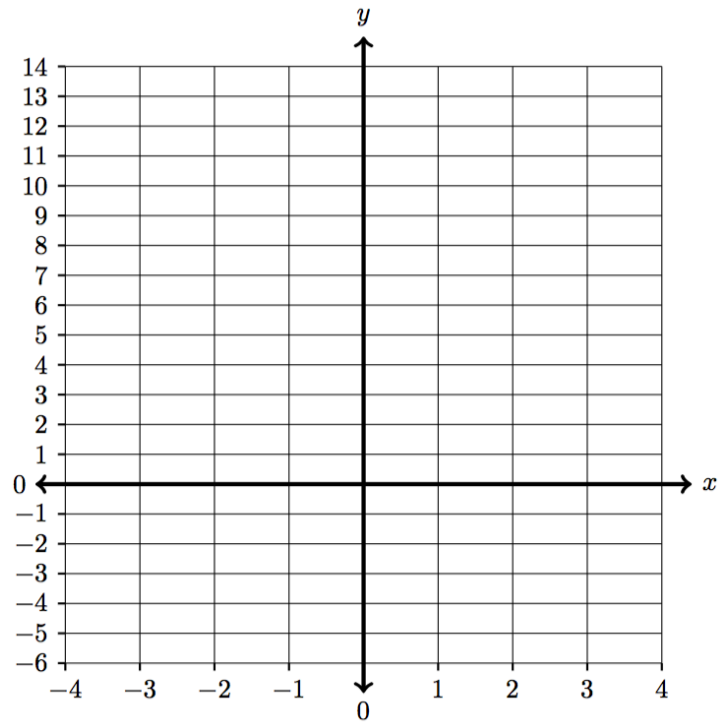
1B. Method 2: Complete the Square : $x^2 = x + 6$

Name: _____

Class #: _____

1C. Method 3: Solve Graphically: $x^2 = x + 6$

	<i>LHS of Equals Sign</i>	<i>RHS of Equals Sign</i>
x		
-2		
-1		
0		
1		
2		
3		
4		



Problems 2 – 5: Solve the following quadratic equations for x using the method of completing the square.

2. $x^2 = 4x - 4$

Name: _____

Class #: _____

3. $3p^2 = 18p - 6$

4. $x^2 = 3x + 5$

5. $5x^2 = 13x + 18$

Name: _____

Class #: _____

Problem 5 – 6: Derive the quadratic formula.

5. $5x^2 + 8x + 3 = 0$

6. $ax^2 + bx + c = 0$

Name: _____

Class #: _____

Problem 7 – 10: Solve the following quadratic equations using the quadratic formula.

7. $x^2 = 4x - 4$

8. $3p^2 = 18p - 6$

Name: _____

Class #: _____

9. $x^2 = 3x + 5$

10. $5x^2 = 13x + 18$