Name __*Key*__ Date _____ Pd ____

11.1 Solving Quadratic Equations by Completing the Square DAY TWO CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Solving quadratics using completing the square method	10 - 13	14 - 17	18 - 21
Finding the perfect "c" in order to complete the square	1 - 9		
Factoring quadratics: perfect square binomials	1 - 9		

Add the proper constant to each binomial so that the resulting trinomial is a perfect square trinomial. Then factor the trinomial.

1. $x^2 + 16x + \square = 64$

$$(x+8)^2$$

2. $y^2 + 2y + \square = 1$

$$(y+1)^2$$

3. $z^2 - 12z + \square = 36$

$$(z-6)^2$$

4. $x^2 - 8x + \square = 16$

$$(x-4)^2$$

5. $p^2 + 9p + \square = \frac{81}{4}$

$$\left(p+\frac{9}{2}\right)^2$$

6. $n^2 + 5n + \square = \frac{25}{4}$

$$\left(n+\frac{5}{2}\right)^2$$

7. $x^2 + x + \square = \frac{1}{4}$

$$\left(x+\frac{1}{2}\right)^2$$

8. $y^2 - y + \square = \frac{1}{4}$

$$\left(y-\frac{1}{2}\right)^2$$

9. $m^2 - 14 + \square = 49$

$$(m-7)^2$$

Solve each equation by completing the square. These equations have real number solutions.

10. $x^2 + 8x = -15$

$$x = -5, -3$$

11. $y^2 + 6y = -8$

$$y = -4, -2$$

12. $x^2 + 6x + 2 = 0$

$$x = -3 \pm \sqrt{7}$$

13. $x^2 - 2x - 2 = 0$

$$x = 1 \pm \sqrt{3}$$

14. $3p^2 - 12p + 2 = 0$

$$p = \frac{6 \pm \sqrt{30}}{3}$$

15. $2x^2 + 14x - 1 = 0$

$$x = \frac{-7 \pm \sqrt{51}}{2}$$

16. $4y^2 - 2 = 12y$

$$y = \frac{3 \pm \sqrt{11}}{2}$$

17. $3x^2 - 4x = 4$

$$x = -\frac{2}{3}, 2$$

Solve each equation by completing the square. Answers may be non-real.

18. $y^2 + 2y + 2 = 0$

$$y = -1 \pm i$$

19. $x^2 + 4x + 6 = 0$

$$x = -2 \pm i\sqrt{2}$$

20. $y^2 + 6y - 8 = 0$

$$y = -3 \pm \sqrt{17}$$

21. $2a^2 + 8a = -12$

$$a = -2 \pm i\sqrt{2}$$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!