

11.1 Solving Quadratic Equations by Completing the Square DAY TWO CYU

Use when you get it right all by yourself
S Use when you did it all by yourself, but made a silly mistake
H Use when you could do it alone with a little help from teacher or peer
G Use when you completed the problem in a group
X Use when a question was attempted but wrong (get help)
N Use when a question was not even attempted

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. $p^2 + 9p + \square = \frac{81}{4}$
$(p+\frac{9}{2})^2$ | 6. $n^2 + 5n + \square = \frac{25}{4}$
$(n+\frac{5}{2})^2$ |
| 7. $x^2 + x + \square = \frac{1}{4}$
$(x+\frac{1}{2})^2$ | 8. $y^2 - y + \square = \frac{1}{4}$
$(y-\frac{1}{2})^2$ | 9. $m^2 - 14m + \square = 49$
$(m-7)^2$ |

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

10. $x^2 + 8x = -15$ 11. $y^2 + 6y = -8$

$x = -5, -3$ $y = -4, -2$

12. $x^2 + 6x + 2 = 0$ 13. $x^2 - 2x - 2 = 0$

$x = -3 \pm \sqrt{7}$ $x = 1 \pm \sqrt{3}$

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

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

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

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

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

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

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

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

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!

