

Algebra II

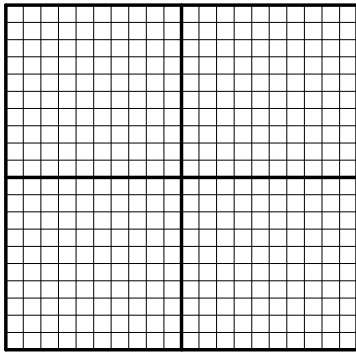
Solving Quadratic Equations – Answer Key

SPI 3103.3.2 Solve quadratic equations and systems, and determine roots or a higher order polynomial.

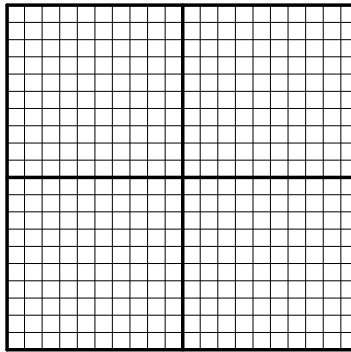
Solve each equation by using the indicated method. For each section, give exact answers in simplest radical form.

Solve each equation by graphing.

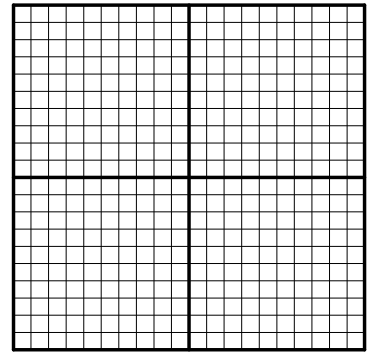
1. $x^2 + 2x - 8 = 0$ **2, -4**



2. $3x^2 + 4x + 3 = 0$ **no real solutions**



3. $x^2 + 10x + 25 = 0$ **-5**



Solve each equation by factoring.

4. $x^2 - 3x - 10 = 0$

5, -2

5. $4x^2 = 11x$

0, $\frac{11}{4}$

6. $3x^2 + 13x = 10$

$-5, \frac{2}{3}$

7. $4x^2 - 6 = -5x$

$\frac{3}{4}, -2$

Solve each equation by using the square root property.

8. $x^2 = 49$

± 7

9. $(x + 3)^2 = 11$

$-3 \pm \sqrt{11}$

10. $x^2 + 10x + 25 = -16$

$-5 \pm 4i$

11. $9x^2 - 6x + 1 = 8$

$\frac{1 \pm 2\sqrt{2}}{3}$

Solve each equation by completing the square.

12. $x^2 - 8x - 65 = 0$

$-5, 13$

13. $x^2 + 19 = 14x$

$7 \pm \sqrt{30}$

14. $2x^2 - 2x = 6$

$\frac{1 \pm \sqrt{13}}{2}$

15. $2x^2 = 28x - 106$

$7 \pm 2i$

Solve each equation by using the quadratic formula.

16. $2x^2 - 7x - 4 = 0$

$-\frac{1}{2}, 4$

17. $4x^2 - 12x = 63$

$\frac{3 \pm 6\sqrt{2}}{2}$

18. $4x^2 + 17 = 4x$

$\frac{1 \pm 4i}{2}$

19. $x^2 = x - 1$

$\frac{1 \pm i\sqrt{3}}{2}$

Solve each equation by using the method of your choice.

20. $5(3x + 2)^2 - 4 = 26$

$\frac{-2 \pm \sqrt{6}}{3}$

21. $x^2 - 21 = 4x$

$-3, 7$

22. $4x^2 - 3x = 6$

$\frac{3 \pm \sqrt{105}}{8}$

23. $x^2 = 4x - 15$

$2 \pm i\sqrt{11}$