

## Quadratic Equations Maze

Directions: Solve each equation by **factoring**. Use your solutions to navigate through the maze. **Staple all work to this paper!**

**Start!**

$x^2 - 14x = 51$   $\{-7, 9\}$   $(a+4)(a-2) = 55$   $\{-9, 7\}$  **End! 😊**  $\{\frac{4}{3}, \frac{1}{2}\}$   $5h^2 + 18h + 4 = 7h - h^2$

$\{-3, 17\}$   $\{-17, 3\}$   $\{-\frac{1}{3}\}$   $\{\frac{1}{3}\}$   $\{-2\}$   $\{-4, \frac{2}{5}\}$   $\{-\frac{5}{2}, \frac{1}{4}\}$

$7p^2 = p^2 - 4p$   $\{0, \frac{2}{3}\}$   $9z^2 + 14z = 8z - 1$   $\{2\}$   $5x^2 + 23x = 3x - 20$   $\{-2, 2\}$   $9r(r-2) = r^2 + 5$

$\{-\frac{2}{3}, 0\}$   $\{\frac{3}{4}, \frac{4}{3}\}$   $\{-6, 1\}$   $\{\frac{5}{2}, \frac{5}{2}\}$   $\{-\frac{2}{5}, \frac{2}{5}\}$   $\{-\frac{1}{4}, \frac{5}{2}\}$   $\{3, 13\}$

$10n^2 = n^2 + 16$   $\{\frac{4}{3}, \frac{4}{3}\}$   $3k^2 - 19 = 15k - 1$   $\{2, 3\}$   $(2v-1)^2 = 26 - 4v$   $\{-3, 13\}$   $2m^2 - 31m = m - 78$

$\{-5, 4\}$   $\{\frac{3}{4}, \frac{3}{4}\}$   $\{-1, 6\}$   $\{-3, 1\}$   $\{-4, 4\}$   $\{-15, 2\}$   $\{-2, 15\}$

$(w-3)^2 = 29 - 5w$   $\{\frac{1}{3}, 1\}$   $21c^2 - 16c - 6 = 1 - 2c$   $\{-1, \frac{1}{3}\}$   $4(x^2 - 7) + 27 = -12x^2$   $\{-\frac{1}{4}, \frac{1}{4}\}$   $b(b-15) = 30 - 2b$

$\{-4, 5\}$   $\{-5, \frac{2}{3}\}$   $\{0, \frac{1}{2}\}$   $\{-1, 3\}$   $\{-\frac{1}{4}, 6\}$   $\{-6, \frac{1}{4}\}$   $\{8, 9\}$

$9c^2 - 39c = 30$   $\{-\frac{2}{3}, 5\}$   $2y(5y+6) = 7y$   $\{-\frac{1}{2}, 0\}$   $5r^2 - 7r + 8 = r^2 + 16r + 14$   $\{-24, 1\}$   $2v^2 + 59 = v^2 + 17v - 13$

Version 1: Factoring © Gina Wilson (All Things Algebra), 2016

## Quadratic Equations Maze

Directions: Solve each equation using the **square roots method**. Use your solutions to navigate through the maze. **Staple all work to this paper!**

$\frac{3}{2}k^2 - 16 = 80$   $\{-7 \pm 3i\}$   $(z+7)^2 = -9$   $\{-10i, -4i\}$   $10 - \frac{1}{4}x^2 = -2$   $\{\pm 2i\}$   $4p^2 + 23 = 7$

$\{\pm 8\}$   $\{\pm 12\}$   $\{\pm 2\sqrt{6}\}$   $\{\pm 4\sqrt{3}\}$   $\{\pm 4\sqrt{3}\}$   $\{\pm 6\sqrt{3}\}$   $\{\pm 6\sqrt{3}\}$

$9m^2 + 54 = 5$   $\{\frac{7}{3}\}$   $4x^2 + 9 = 105$   $\{\pm 6\sqrt{2}\}$   $\frac{x^2 + 10}{2} = 19$   $\{\pm 3\sqrt{6}\}$   $10k^2 - 97 = 3k^2 + 659$

$\{\frac{7}{3}i\}$   $\{\pm 4\sqrt{6}\}$   $\{\pm 3\sqrt{5}\}$   $\{\pm 2\sqrt{3}\}$   $\{\pm 6\}$   $\{\pm 6\}$   $\{\pm \sqrt{7}\}$

$3m^2 + 13 = m^2 + 397$   $\{\pm 4\sqrt{2}\}$   $2y^2 - 1 = 149$   $\{\pm 5\sqrt{3}\}$   $\frac{-n^2 - 4}{2} = 16$   $\{\pm 3\sqrt{6}\}$  **Start!**  $2v^2 - 47 = 61$

$\{\pm 3\sqrt{8}\}$   $\{\pm 8\sqrt{3}\}$   $\{\pm 25\sqrt{3}\}$   $\{\pm 2\sqrt{7}\}$   $\{\pm 2\sqrt{5}\}$   $\{\pm 2\sqrt{3}\}$   $\{\pm 3\}$

$\frac{7}{2}a^2 - 5 = 37$   $\{\pm \sqrt{6}\}$   $(c-1)^2 + 7 = 3$   $\{\pm 3i\}$   $11 + 3q^2 = -49$   $\{\pm 2i\sqrt{5}\}$   $7x^2 - 2 = -65$

$\{\pm 9\sqrt{3}\}$   $\{1 \pm 2i\}$   $\{\pm 15\sqrt{3}\}$   $\{-i, 3i\}$   $\{\pm 5\sqrt{2}\}$   $\{\pm \frac{4}{9}\}$   $\{\pm 3i\}$

$11 - 6x^2 = 173$   $\{\pm 3i\sqrt{3}\}$   $\frac{3}{5}h^2 + 7 = 88$   $\{\pm 3\sqrt{15}\}$   $81n^2 - 7 = 9$   $\{\pm \frac{9}{4}\}$  **End! 😊**

Version 2: Square Roots © Gina Wilson (All Things Algebra), 2016

## Quadratic Equations Maze

Directions: Solve each equation by **completing the square**. Use your solutions to navigate through the maze. **Staple all work to this paper!**

$4q^2 + 8q - 1 = 4$   $\{-8, -6\}$   $2m^2 + 48 = m^2 - 14m$   $\{6, 8\}$   $2y^2 + 11y = y^2 + 3y - 28$   $\{-1, 3\}$   $7w^2 - 14w - 13 = 8$  **Start!**

$\{-\frac{5}{2}, \frac{1}{2}\}$   $\{1 \pm 2i\sqrt{2}\}$   $\{1 \pm 4i\sqrt{2}\}$   $\{-5, 7\}$   $\{-7, 5\}$   $\{4 \pm 2i\sqrt{3}\}$   $\{-3, 1\}$

$3h^2 + 53 = -19 - 30h$   $\{4, 6\}$   $5x^2 - 10x + 51 = 6$   $\{-5, 7\}$   $3b^2 - 79 = b^2 + 4b - 9$   $\{\frac{3}{2}, \frac{3}{4}\}$   $9v^2 + 18v + 5 = -3$

$\{-6, -4\}$   $\{2 \pm \sqrt{2}\}$   $\{1 \pm 2\sqrt{2}\}$   $\{1 \pm \sqrt{3}\}$   $\{-1 \pm \sqrt{3}\}$   $\{-\frac{4}{3}, \frac{2}{3}\}$   $\{\frac{2}{3}, \frac{4}{3}\}$

$m^2 - 12m + 23 = 5$   $\{6 \pm 3\sqrt{2}\}$   $2c^2 + 4c + 14 = c^2 + 9$   $\{2 \pm i\}$   $v^2 + 2v - 14 = -12$   $\{i \pm \sqrt{3}\}$  **End! 😊**

$\{-6 \pm 3\sqrt{2}\}$   $\{6 \pm 9\sqrt{2}\}$   $\{-2 \pm i\}$   $\{1 \pm i\sqrt{3}\}$   $\{\frac{3}{4}, -\frac{1}{4}\}$   $\{-3 \pm 4\sqrt{5}\}$   $\{-3 \pm 2\sqrt{5}\}$

$x^2 - 8x + 27 = 18$   $\{3 \pm \sqrt{2}\}$   $4u^2 + 24u + 29 = 1$   $\{3 \pm i\sqrt{2}\}$   $16h^2 + 8 = 16h + 5$   $\{\frac{1}{4}, \frac{3}{4}\}$   $-2r^2 - 12r + 10 = -12$

$\{0, 14\}$   $\{-3 \pm \sqrt{2}\}$   $\{5 \pm 4i\sqrt{2}\}$   $\{5 \pm 2\sqrt{2}\}$   $\{5 \pm 9\sqrt{6}\}$   $\{5 \pm 3\sqrt{6}\}$   $\{3 \pm i\sqrt{7}\}$

$z^2 + 32 = 14z - 17$   $\{7\}$   $n^2 - 10n + 13 = -20$   $\{5 \pm 2i\sqrt{2}\}$   $a^2 - 11a - 1 = 28 - a$   $\{3 \pm \sqrt{7}\}$   $k^2 - 6k + 4 = -12$

Version 3: Completing the Square © Gina Wilson (All Things Algebra), 2016

## Quadratic Equations Maze

Directions: Solve each equation using the **quadratic formula**. Use your solutions to navigate through the maze. **Staple all work to this paper!**

$a^2 = 5a + 104$   $\{-13, 8\}$   $x^2 + 4x - 1 = 0$   $\{-8, 13\}$   $10x^2 + 5 = 1$   $\{-2 \pm \sqrt{5}\}$

$\{4 \pm \sqrt{7}\}$   $\{\pm \sqrt{7}\}$   $\{-\frac{9}{2}, 5\}$   $\{\frac{9}{2}, 5\}$   $\{5 \pm \sqrt{2}\}$   $\{2 \pm \sqrt{5}\}$   $\{\pm \frac{\sqrt{10}}{5}\}$

$-m^2 + 14m - 11 = 6m - 2$   $\{-4 \pm \sqrt{7}\}$  **Start!**  $4r^2 - 90 = 2r$   $\{-5, \frac{9}{2}\}$   $-10p^2 - 2p = 5$   $\{0, \frac{3}{2}\}$   $8q^2 - 9 = 12q - 9$

$\{-\frac{3 \pm 5\sqrt{3}}{12}\}$   $\{-1 \pm 5i\sqrt{3}\}$   $\{\frac{9 \pm 3\sqrt{5}}{2}\}$   $\{\frac{9}{2}, 5\}$   $\{\frac{-1 \pm 7i}{10}\}$   $\{\frac{3}{2}, 0\}$   $\{\frac{5 \pm 3i\sqrt{15}}{10}\}$

$-12w^2 = 7 + 6w$   $\{\frac{3 \pm 5i\sqrt{3}}{12}\}$   $-x^2 - 8x - 2 = x + 7$   $\{-9 \pm 3\sqrt{5}\}$   $2h^2 = h^2 + 2h + 17$   $\{-1 \pm 3\sqrt{2}\}$   $5r^2 - 5r = -8$

$\{\frac{3 \pm \sqrt{23}}{7}\}$   $\{\frac{1 \pm 5i\sqrt{3}}{4}\}$   $\{-4 \pm \frac{\sqrt{10}}{3}\}$   $\{-1 \pm 2\sqrt{3}\}$   $\{-1 \pm \sqrt{17}\}$   $\{1 \pm 3\sqrt{2}\}$   $\{\frac{1 \pm 3i\sqrt{15}}{2}\}$

$7p^2 - 17 = 6p - 15$   $\{-3 \pm \sqrt{23}\}$   $3a^2 - a + 2 = 7a$   $\{1 \pm \sqrt{17}\}$   $c^2 + 5c = 7c + 16$   $\{2 \pm \sqrt{2}\}$   $2h^2 - 8h = -9$

$\{-6 \pm 3\sqrt{5}\}$   $\{\frac{4 \pm \sqrt{10}}{3}\}$   $\{-1 \pm i\sqrt{31}\}$   $\{-4, 7\}$   $\{-7, 4\}$   $\{-4 \pm i\sqrt{2}\}$   $\{\frac{4 \pm \sqrt{2}}{2}\}$

$-y^2 + 2 = 12y - 7$   $\{6 \pm 3\sqrt{5}\}$   $6v^2 = -3v - 12$   $\{-7, -4\}$   $2k^2 + 3k - 13 = k^2 + 15$   $\{2\sqrt{6}\}$   $3m^2 - 21 = 51$

Version 4: Quadratic Formula © Gina Wilson (All Things Algebra), 2016

