

CUT & PASTE
Puzzles

$7x^2 = 3x^2 + 25$
 $x^2 - 4x = -3$
 $3x^2 + 8 = 92$
 $7x^2 - 1 = 20$
 $3x^2 + 12x - 1 = 14$
 $x^2 + 14x + 45 = 0$
 $2x^2 + 12x = x - 9$
 $x^2 + 9x + 13 = 5$
 $4x^2 - 22 = 11x$
 $8x^2 = 11x - 2$
 $6x^2 + 5x = 39$
 $(2x + 3)^2 = 25$
 $x^2 - 7x + 11 = 1$
 $2x^2 + 12x = x - 9$
 $5x^2 - 11x = 16$
 $9x^2 = 3x + 15$
 $5x^2 = 40x$
 $9x^2 - 2 = 14$
 $2x^2 + 13 = 27$
 $12x - 11 = 3$
 $8x^2 + 14x + 3 = 0$
 $7x^2 - 1 = 20$
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 $5x^2 = 40x$
 $9x^2 - 2 = 14$
 $2x^2 + 13 = 27$
 $12x - 11 = 3$
 $8x^2 + 14x + 3 = 0$

A
 $x = \{-0.82, 3.07\}$
B
 $x = \{-8.82, 1.82\}$
C
 $x = \{-1.14, 1.47\}$
E
 $x = \{-2.43, 1.12\}$
F
 $x = \{-2, \frac{3}{5}\}$

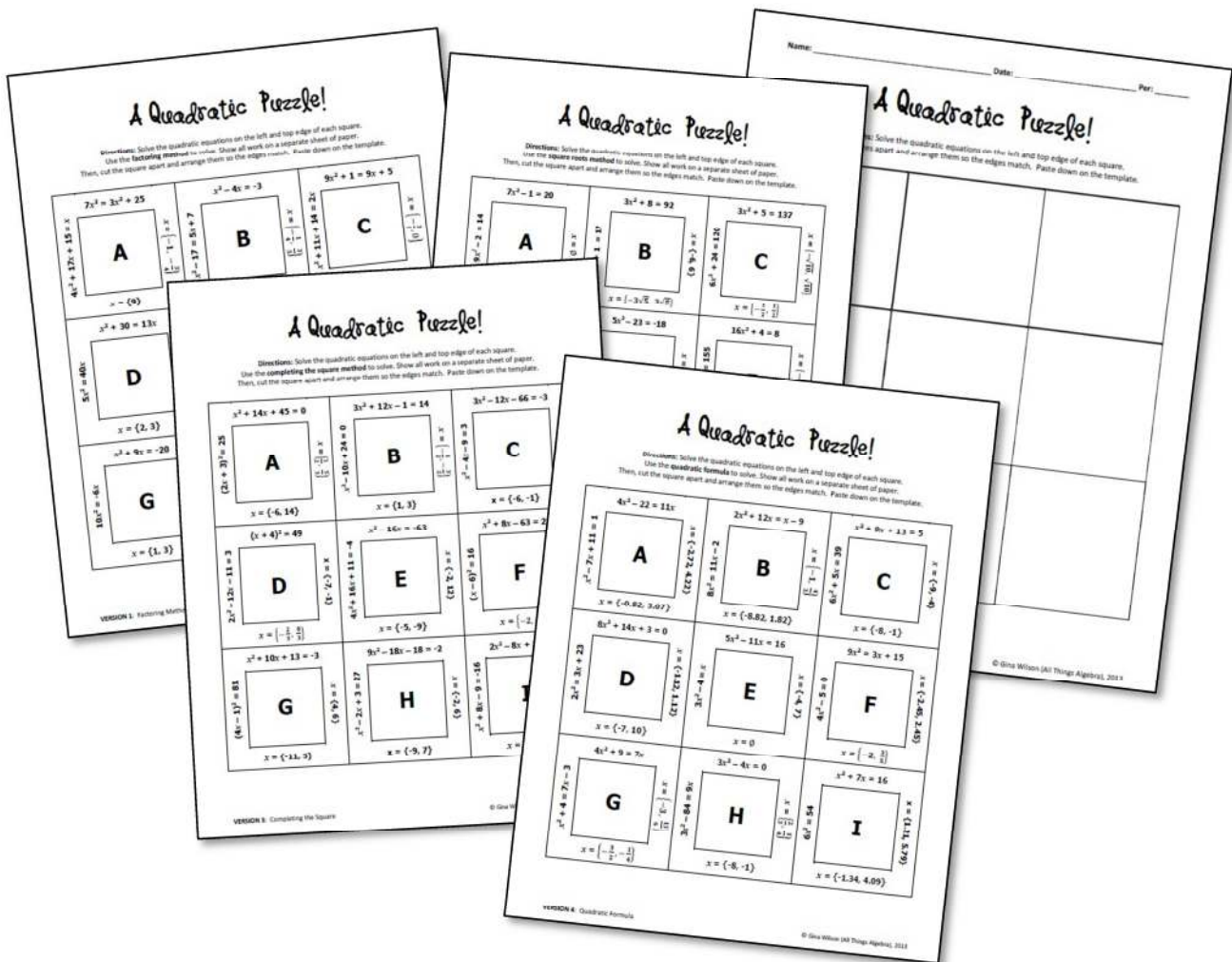
SOLVING QUADRATICS

by all methods

Created by: **ALL THINGS ALGEBRA®**

Quadratic Equations Cut-Out Puzzles!

Directions: Students solve the quadratic equations around the edges of the individual squares. Then, they cut out their pieces and rearrange them so that their edges match. They paste them onto a template. Four puzzles (factoring, square roots, completing the square, and quadratic formula), a template to paste, and all answer keys are included. The “letters” make the grading very simple. I have my students show all their work on a separate sheet of paper and staple to their puzzle.



A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Use the **factoring method** to solve. Show all work on a separate sheet of paper.
Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$7x^2 = 3x^2 + 25$ $4x^2 + 17x + 15 = x$ A $x = \{9\}$	$x^2 - 4x = -3$ $x^2 - 17 = 5x + 7$ B $x = \{3, 10\}$	$9x^2 + 1 = 9x + 5$ $x^2 + 11x + 14 = 2x$ C $x = \{-4, 4\}$
$x^2 + 30 = 13x$ $5x^2 = 40x$ D $x = \{2, 3\}$	$x^2 + 81 = 18x$ $4x^2 = 1$ E $x = \{-2, 15\}$	$3x^2 - 48 = 0$ $4x^2 + 7x + 4 = 1$ F $x = \{-1, 6\}$
$x^2 + 9x = -20$ $10x^2 = -6x$ G $x = \{1, 3\}$	$x^2 - 3x = 2x + 6$ $7x^2 - 5x = x^2 + 4$ H $x = \{-5, 5\}$	$3x^2 + 15x = 0$ $x^2 - 10x = 2x - 35$ I $x = \left\{-\frac{5}{2}, \frac{5}{2}\right\}$

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Use the **factoring method** to solve. Show all work on a separate sheet of paper.
Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$3x^2 + 15x = 0$ $x^2 - 10x = 2x - 35$ I $\{2, -7\} = x$ $x = \left\{-\frac{5}{2}, \frac{5}{2}\right\}$	$9x^2 + 1 = 9x + 5$ $x^2 + 11x + 14 = 2x$ C $\left\{0, \frac{5}{3}\right\} = x$ $x = \{-4, 4\}$	$x^2 + 9x = -20$ $10x^2 = -6x$ G $\{8, -9\} = x$ $x = \{1, 3\}$
$7x^2 = 3x^2 + 25$ $4x^2 + 17x + 15 = x$ A $x = \left\{-1, -\frac{3}{4}\right\}$ $x = \{9\}$	$3x^2 - 48 = 0$ $4x^2 + 7x + 4 = 1$ F $\{8, -9\} = x$ $x = \{-1, 6\}$	$x^2 - 4x = -3$ $x^2 - 17 = 5x + 7$ B $x = \left\{-\frac{1}{4}, \frac{3}{5}\right\}$ $x = \{3, 10\}$
$x^2 + 81 = 18x$ $4x^2 = 1$ E $x = \left\{-\frac{1}{2}, \frac{4}{3}\right\}$ $x = \{-2, 15\}$	$x^2 - 3x = 2x + 6$ $7x^2 - 5x = x^2 + 4$ H $\{8, 0\} = x$ $x = \{-5, 5\}$	$x^2 + 30 = 13x$ $5x^2 = 40x$ D $\{7, 0\} = x$ $x = \{2, 3\}$

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Use the **square roots method** to solve. Show all work on a separate sheet of paper.
Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$7x^2 - 1 = 20$ A $9x^2 - 2 = 14$ $x = \{-2\sqrt{5}, 2\sqrt{5}\}$	$3x^2 + 8 = 92$ B $25x^2 + 1 = 17$ $x = \{-3\sqrt{5}, 3\sqrt{5}\}$	$3x^2 + 5 = 137$ C $6x^2 + 24 = 120$ $x = \{-\sqrt{10}, \sqrt{10}\}$
$\frac{1}{3}x^2 - 4 = 23$ D $2x^2 + 13 = 27$ $x = \{-2\sqrt{7}, 2\sqrt{7}\}$	$5x^2 - 23 = -18$ E $7x^2 - 5 = -35$ $x = \{-\frac{2}{3}, \frac{2}{3}\}$	$16x^2 + 4 = 8$ F $4x^2 + 11 = 155$ $x = \{-\sqrt{3}, \sqrt{3}\}$
$2x^2 - 7 = 83$ G $6x^2 - 5 = 19$ $x = \{-3, 3\}$	$x^2 - 100 = 0$ H $3x^2 - 19 = 11$ $x = \{-8, 8\}$	$\frac{3}{2}x^2 + 7 = 103$ I $2x^2 - 7 = 57$ $x = \{-\frac{1}{4}, \frac{1}{4}\}$

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Use the **square roots method** to solve. Show all work on a separate sheet of paper.
Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$\frac{1}{3}x^2 - 4 = 23$ $2x^2 + 13 = 27$ D $x = \{-2\sqrt{7}, 2\sqrt{7}\}$ $\{4, 4\} = x$	$3x^2 + 5 = 137$ $6x^2 + 24 = 120$ C $x = \{-\sqrt{10}, \sqrt{10}\}$ $x = \{-\frac{1}{2}, \frac{1}{2}\}$	$x^2 - 100 = 0$ $3x^2 - 19 = 11$ H $x = \{-8, 8\}$ $\{9, 9\} = x$
$3x^2 + 8 = 92$ $25x^2 + 1 = 17$ B $x = \{-3\sqrt{5}, 3\sqrt{5}\}$ $\{9, 9\} = x$	$16x^2 + 4 = 8$ $4x^2 + 11 = 155$ F $x = \{-4\sqrt{2}, 4\sqrt{2}\}$ $x = \{-\sqrt{3}, \sqrt{3}\}$	$\frac{3}{2}x^2 + 7 = 103$ $2x^2 - 7 = 57$ I $x = \{-1, 1\}$ $\{\frac{1}{4}, \frac{1}{4}\} = x$
$2x^2 - 7 = 83$ $6x^2 - 5 = 19$ G $x = \{-3, 3\}$ $\{\frac{4}{3}, \frac{4}{3}\} = x$	$7x^2 - 1 = 20$ $9x^2 - 2 = 14$ A $x = \{-2\sqrt{5}, 2\sqrt{5}\}$ $\emptyset = x$	$5x^2 - 23 = -18$ $7x^2 - 5 = -35$ E $x = \{-\frac{2}{3}, \frac{2}{3}\}$ $\{\frac{1}{3}, \frac{1}{3}\} = x$

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Use the **completing the square method** to solve. Show all work on a separate sheet of paper.
Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$x^2 + 14x + 45 = 0$ $(2x + 3)^2 = 25$ A $x = \{-6, 14\}$ $\left\{\frac{2}{3}, \frac{1}{5}\right\} = x$	$3x^2 + 12x - 1 = 14$ $x^2 - 10x + 24 = 0$ B $x = \{1, 3\}$ $x = \left\{-\frac{5}{2}, -\frac{3}{2}\right\}$	$3x^2 - 12x - 66 = -3$ $x^2 - 4x - 9 = 3$ C $x = \{-6, -1\}$ $x = \{2, 10\}$
$(x + 4)^2 = 49$ $2x^2 - 12x - 11 = 3$ D $x = \left\{-\frac{2}{3}, \frac{8}{3}\right\}$ $\{1, -1\} = x$	$x^2 - 16x = -63$ $4x^2 + 16x + 11 = -4$ E $x = \{-5, -9\}$ $\{21, -2\} = x$	$x^2 - 8x - 63 = 21$ $(x - 6)^2 = 16$ F $x = \left\{-2, \frac{3}{4}\right\}$ $\{7, 5\} = x$
$x^2 + 10x + 13 = -3$ $(4x - 1)^2 = 81$ G $x = \{-11, 3\}$ $\{9, 4\} = x$	$9x^2 - 18x - 18 = -2$ $x^2 - 2x + 3 = 27$ H $x = \{-9, 7\}$ $\{9, -2\} = x$	$2x^2 - 8x + 13 = 7$ $x^2 + 8x - 9 = -16$ I $x = \{-3, 7\}$ $x = \{-4, 1\}$

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Use the **completing the square method** to solve. Show all work on a separate sheet of paper.
Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$x^2 + 10x + 13 = -3$ $(4x - 1)^2 = 81$ G $x = \{-11, 3\}$	$3x^2 + 12x - 1 = 14$ $x^2 - 10x + 24 = 0$ B $x = \{1, 3\}$	$x^2 - 16x = -63$ $4x^2 + 16x + 11 = -4$ E $x = \{-5, -9\}$
$(x + 4)^2 = 49$ $2x^2 - 12x - 11 = 3$ D $x = \left\{-\frac{2}{3}, \frac{8}{3}\right\}$	$2x^2 - 8x + 13 = 7$ $x^2 + 8x - 9 = -16$ I $x = \{-3, 7\}$	$x^2 + 14x + 45 = 0$ $2x + 3 = 25$ A $x = \{-6, 14\}$
$9x^2 - 18x - 18 = -2$ $x^2 - 2x + 3 = 27$ H $x = \{-9, 7\}$	$3x^2 - 12x - 66 = -3$ $x^2 - 4x - 9 = 3$ C $x = \{-6, -1\}$	$x^2 - 8x - 63 = 21$ $(x - 6)^2 = 16$ F $x = \left\{-2, \frac{3}{4}\right\}$

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Use the **quadratic formula** to solve. Show all work on a separate sheet of paper.
Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$4x^2 - 22 = 11x$ A $x^2 - 7x + 11 = 1$ $x = \{-0.82, 3.07\}$	$2x^2 + 12x = x - 9$ B $8x^2 = 11x - 2$ $x = \{-1, \frac{4}{3}\}$ $x = \{-8.82, 1.82\}$	$x^2 + 9x + 13 = 5$ C $6x^2 + 5x + 2 = 39$ $x = \{-9, -4\}$ $x = \{-1.14, 1.47\}$
$8x^2 + 14x + 3 = 0$ D $2x^2 = 3x + 23$ $x = \{-1.12, 1.12\}$ $x = \{-7, 10\}$	$5x^2 - 11x = 16$ E $3x^2 - 4 = x$ $x = \{-4, 7\}$ $x = \emptyset$	$9x^2 = 3x + 15$ F $0 = 5 - 4x^2$ $x = \{-2.45, 2.45\}$ $x = \{-2, \frac{3}{5}\}$
$4x^2 + 9 = 7x$ G $x^2 + 4 = 7x - 3$ $x = \{-3, \frac{13}{6}\}$ $x = \{-\frac{3}{2}, -\frac{1}{4}\}$	$3x^2 - 4x = 0$ H $3x^2 - 84 = 9x$ $x = \{\frac{2}{3}, \frac{1}{4}\}$ $x = \{-8, -1\}$	$x^2 + 7x = 16$ I $6x^2 = 54$ $x = \{1.21, 5.79\}$ $x = \{-1.34, 4.09\}$

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
 Use the **quadratic formula** to solve. Show all work on a separate sheet of paper.
 Then, cut the square apart and arrange them so the edges match. Paste down on the template.

$2x^2 + 12x = x - 9$ $8x^2 = 11x - 2$ B $x = \{-1, \frac{4}{3}\}$ $x = \{-8.82, 1.82\}$	$5x^2 - 11x = 16$ $3x^2 - 4 = x$ E $x = \{-4, 7\}$ $x = \emptyset$	$3x^2 - 4x = 0$ $3x^2 - 84 = 9x$ H $x = \{\frac{2}{3}, \frac{1}{4}\}$ $x = \{-8, -1\}$
$x^2 + 7x = 16$ $6x^2 = 54$ I $x = \{1.21, 5.79\}$ $x = \{-1.34, 4.09\}$	$4x^2 + 9 = 7x$ $x^2 + 4 = 7x - 3$ G $x = \{-3, \frac{13}{6}\}$ $x = \{-\frac{3}{2}, -\frac{1}{4}\}$	$x^2 + 9x + 13 = 5$ $6x^2 + 5x = 39$ C $x = \{-9, -4\}$ $x = \{-1.14, 1.47\}$
$4x^2 - 22 = 11x$ $x^2 - 7x + 11 = 1$ A $x = \{-2.72, 4.22\}$ $x = \{-0.82, 3.07\}$	$8x^2 + 14x + 3 = 0$ $2x^2 = 3x + 23$ D $x = \{-1.1, 1.12\}$ $x = \{-7, 10\}$	$9x^2 = 3x + 15$ $0 = 5 - x^2$ F $x = \{-2.45, 2.45\}$ $x = \{-2, \frac{3}{5}\}$

Name: _____ Date: _____ Per: _____

A Quadratic Puzzle!

Directions: Solve the quadratic equations on the left and top edge of each square.
Cut the squares apart and arrange them so the edges match. Paste down on the template.



Thank you SO MUCH

for purchasing this resource!

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