

Assessment Title: Quadratics Puzzle Activity
Unit 3: Quadratic Functions Working with Equations

Learning Targets:

- I can solve quadratic equations that result in both real and complex solutions.

Solving Quadratic Equations Puzzle

The puzzle pieces provided fit together to form a 3x3 array. To complete the puzzle, match each quadratic equation to its solution set. Once you have solved the puzzle, tape or glue your solution back together on a blank sheet of paper and attach this sheet with your work shown.

In the space below, ***show all work*** as you solve each quadratic equation.

Assessment Title: Quadratics Puzzle Activity
Unit 3: Quadratic Functions Working with Equations

$3x^2 - 5x + 20 = 0$ $x^2 + 4x + 13 = 0$ $0 = 96 + 2x^2$ $x^2 - 10x - 50 = 0$	$x^2 + 6x - 23 = 0$ $x = \pm 2i\sqrt{3}$ $x = \frac{1 + \sqrt{7}}{6}$	$3x^2 + 5x = 2$ $3x^2 + 12x - 6 = 0$ $2 - 9\sqrt{7} = x$ $x^2 - 100 = 0$ $x^2 - 14x + 19 = 0$
$x = \frac{1 \pm \sqrt{3}}{20}$ $12x^2 - x - 6 = 0$ $x = -11 \text{ or } x = -3$	$6x^2 - 2x - 1 = 0$ $4x^2 + 12x + 9 = 4$ $\frac{2}{1-} = x \text{ and } \frac{2}{5-} = x$ $6 = x \text{ and } 7- = x$ $x = \frac{3}{4} \text{ or } x = -2$	$x = \pm 100$ $2x^2 - 4x - 30 = 0$ $11 = x \text{ and } 3 = x$ $5x^2 + 125 = 0$
$x^2 \pm 14x + 33 = 0$ $x^2 - 3x - 10 = 0$ $0 = 1 + x^2 - 2x^2$ $x = -3 \pm 4\sqrt{2}$	$4x^2 + 5x - 6 = 0$ $x = \frac{1}{2} \text{ or } x = 1$ $1 + i\sqrt{3} = x$ $x = -2 \pm 3i$	$x = \pm 5i$ $-3x^2 + 6x - 30 = 0$ $\frac{9}{5\sqrt{5} + 5} = x$ $2x^2 - 5x - 6 = 0$

Observational Checklist Template

Solving Quadratics Puzzle

A.REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

A.REI.4 Solve quadratic equations in one variable.

- a) ~~Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.~~
- b) Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b .

Objectives:

1. Student correctly matches a quadratic equation with its correct solutions.
2. Student shows multiple steps used to solve each quadratic equation.
3. Student can verbally name or describe the method they used to solve each quadratic equation.

Coding:

I=Student needs instruction and has not yet achieved this objective.

P=Student needs more practice on this objective, but is beginning to understand.

A=Student is ready to apply this objective to various situations.

	Objective #1			Objective #2			Objective #3		
Student	<i>I</i>	<i>P</i>	<i>A</i>	<i>I</i>	<i>P</i>	<i>A</i>	<i>I</i>	<i>P</i>	<i>A</i>
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