



TEACHER PAGE
Lesson: Quadratic Formula
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New Arizona Math Standard 3 Patterns, Algebra and Functions Grades 9-12
Articulated 3MH3-17 Solve quadratic equations.

Learning Objectives: The student will be able to:

- designate numerical values for a, b, and c in the standard quadratic equation, $ax^2 + bx + c = D$
- use the quadratic formula accurately
- find the roots (solutions) to a quadratic equation
- determine the x intercepts of the quadratic equations parabolic graph.

Entry Skills:

The student will perform better on this lesson if they have had first year Algebra.

Materials:

Students will possibly need paper and pencils to show their work.

Overview:

This lesson takes students step by step in a tutorial formation using the quadratic formula. The student will see three different situations where the equations have 2, 1, or no real solutions. Teacher should demonstrate to students why there are 2, 1, or no real solutions.

Content:

If one is to find the roots of a quadratic equation, and she/he chooses to use the quadratic formula, the pencil and paper will be needed. A calculator can only be a guide; students will have to perform some operations on their own.

Follow-up:

The graphing and “calc” features on the TI graphing calculators can help students find the roots with the push of a few buttons. TI-92 and TI-89, the roots (or zeros) can be found without even graphing. SO WHAT! provides pictures of an actual graph rising out of the ground and slicing through the air. DIG DEEPER provides a challenge on the soccer field. TALK ABOUT IT! sets students up with an active graphing calculator that they can use. The problems on the screen are to be solved with the calculator, as well as student created and shared problems.

Assessment:

Fairly straightforward, though students will need paper and pencil to calculate the roots. It's difficult for anyone to do this lesson in his/her head. Students need to select the graph that represents the given formula. Don't miss the “laugher” after completing the SHOW.

