Solving Quadratic Equations

(CCSS.Math.Content.HSA.REI.B.4.b)

A **quadratic equation** is a polynomial of degree 2, typically written $ax^2 + bx + c = 0$. **Completing the square** is the process of converting an expression, such as a quadratic expression, into a perfect square by adding or subtracting terms on both sides. The **quadratic formula** is a formula that determines the roots of a quadratic equation from its coefficients. A **complex number** can be written as $a + bi$, where a and b are real and i is an imaginary number whose square equals −1.

If your students…

Choose the "wrong" method:

Congratulate your students on finding the right solution(s), and then point out that, say, they didn't need to use the quadratic formula to solve $x^2 - 2x + 1 = 0$ when it is so easily factorable.

Mishandle complex numbers:

Remind them of the essential features of imaginary numbers: that i can be thought of as $i = \sqrt{-1}$ and $i^2 = -1$.

WATCH: Complex Numbers - Multiplying and Dividing

https://www.opened.com/video/complex-numbers-multiplying-and-dividing/116107

Mishandle quadratic equations with complex solutions:

Some students work with the quadratic formula until they determine that the discriminant is negative, and then they get lost amidst the imaginary numbers.

WATCH: Solving Quadratic Equations using the Quadratic Formula - Example 2, Complex Solutions

https://www.opened.com/video/solving-quadratic-equations-using-the-quadratic-formula/115844