



## Solving Quadratic Equations

### Today's Standard

HSA.REI.B.4b - 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  $b$ .

### Real-World Applications for this Standard

Physics: Calculating projectile motion; Engineering: Designing parabolic structures; Finance: Modeling profit and loss scenarios; Computer Science: Graphics and animation; Biology: Population growth models

### Today I Learned

Today, we learned how to solve quadratic equations. These are equations where the highest power of the variable is 2. We can solve them by different methods like taking square roots or using a special formula called the quadratic formula.

### Common Stumbling Blocks

Some kids might think that all quadratic equations have real solutions, but that's not true. Some have solutions that use imaginary numbers. Another common mistake is thinking that the quadratic formula is the only way to solve these equations. There are other methods too!

### Quiz Me

- What is a quadratic equation?
- How can you solve a quadratic equation?
- What happens if the quadratic equation has no real solutions?
- What is the quadratic formula used for?
- Can you name another method to solve a quadratic equation?

### Help Me

Quadratic equations are used in many real-world situations like calculating the path of a ball when you throw it, designing bridges, or even in computer games for animations. Learning how to solve them helps us understand and solve these real-world problems.

