



Understanding the Fundamental Theorem of Algebra

Today's Standard

HSN.CN.C9 - (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

| Cues | Notes |
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| What is the Fundamental Theorem of Algebra? | The Fundamental Theorem of Algebra states that every non-zero polynomial equation has at least one complex root. |
| How does it apply to quadratic polynomials? | For quadratic polynomials, this means they have exactly two roots, which may be real or complex. |
| What are complex roots? | Complex roots are solutions to polynomial equations that include imaginary numbers. |
| Why is this theorem important? | This theorem is important because it ensures that polynomial equations can be solved within the complex number system. |
| What are common misconceptions about this theorem? | Common misconceptions include thinking the theorem only applies to real numbers and that quadratic polynomials can have more than two roots. |

Summary

The Fundamental Theorem of Algebra states that every non-zero polynomial has at least one complex root. For quadratic polynomials, this means they have exactly two roots, which can be real or complex. Understanding this theorem is crucial for solving polynomial equations within the complex number system.