

Algebra II Honors Chapter 4 Test Sample Questions 1st Half

Lesson 106 | Algebra II | Polynomial zeros and division • Factoring polynomials

<https://www.youtube.com/watch?v=O1I4HkPM1yo>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01 Find every real and complex zero: $x^2 - 2x - 99$.

02 Factor completely over the real numbers: $x^3 - 3x^2 + 121x - 363$.

03 Find every real and complex zero: $x^4 - 125x^2 + 484$.

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Name: _____ Date: _____ Show your reasoning.

04

Factor completely over the real numbers: $x^2 + 5x - 126$.

05

Find every real and complex zero: $x^3 - 7x^2 + 144x - 1008$.

06

Factor completely over the real numbers: $x^4 - 130x^2 + 1089$.

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01 Find every real and complex zero: $x^2 - 2x - 99$.

Factorization: $(x - 11)(x + 9)$. Zeros: -9, 11.

02 Factor completely over the real numbers: $x^3 - 3x^2 + 121x - 363$.

Factorization: $(x - 3)(x^2 + 121)$. Expand the factors to check the original expression. Quadratic factors with negative discriminant remain irreducible over the reals.

03 Find every real and complex zero: $x^4 - 125x^2 + 484$.

Factorization: $(x - 11)(x - 2)(x + 2)(x + 11)$. Zeros: -11, -2, 2, 11.

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04

Factor completely over the real numbers: $x^2 + 5x - 126$.

Factorization: $(x - 9)(x + 14)$. Expand the factors to check the original expression. Quadratic factors with negative discriminant remain irreducible over the reals.

05

Find every real and complex zero: $x^3 - 7x^2 + 144x - 1008$.

Factorization: $(x - 7)(x^2 + 144)$. Zeros: 7.

06

Factor completely over the real numbers: $x^4 - 130x^2 + 1089$.

Factorization: $(x - 11)(x - 3)(x + 3)(x + 11)$. Expand the factors to check the original expression. Quadratic factors with negative discriminant remain irreducible over the reals.