

Algebra II Honors Chapter 4 Test Sample Questions 2nd Half

Lesson 109 | Algebra II | Polynomial zeros and division • Factoring polynomials

<https://www.youtube.com/watch?v=dfD9jM5pCYw>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01 Find every real and complex zero: $x^2 + 7x - 18$.

02 Factor completely over the real numbers: $x^3 - 8x^2 + 49x - 392$.

03 Find every real and complex zero: $x^4 - 41x^2 + 400$.

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Name: _____ Date: _____ Show your reasoning.

04

Factor completely over the real numbers: $x^2 - 3x - 130$.

05

Find every real and complex zero: $x^3 - 8x^2 + 16x - 128$.

06

Factor completely over the real numbers: $x^4 - 106x^2 + 2025$.

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01 Find every real and complex zero: $x^2 + 7x - 18$.

Factorization: $(x - 2)(x + 9)$. Zeros: -9, 2.

02 Factor completely over the real numbers: $x^3 - 8x^2 + 49x - 392$.

Factorization: $(x - 8)(x^2 + 49)$. 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: $x^4 - 41x^2 + 400$.

Factorization: $(x - 5)(x - 4)(x + 4)(x + 5)$. Zeros: -5, -4, 4, 5.

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04

Factor completely over the real numbers: $x^2 - 3x - 130$.

Factorization: $(x - 13)(x + 10)$. 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: $x^3 - 8x^2 + 16x - 128$.

Factorization: $(x - 8)(x^2 + 16)$. Zeros: 8.

06

Factor completely over the real numbers: $x^4 - 106x^2 + 2025$.

Factorization: $(x - 9)(x - 5)(x + 5)(x + 9)$. Expand the factors to check the original expression. Quadratic factors with negative discriminant remain irreducible over the reals.