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topics on polynomials

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Related topic	PropertiesOfOrthogonalPolynomials

Definitions

1. polynomial ring
2. derivative of polynomial
3. polynomial ring over integral domain
4. polynomial ring over a field
5. polynomial ring which is PID
6. skew polynomial ring
7. q skew polynomial ring
8. factor theorem
9. order and degree of polynomial
10. length of a polynomial
11. polynomial growth

Polynomials over \mathbb{R}

1. polynomial long division
2. polynomial interpolation, Lagrange interpolation formula
3. Weierstrass approximation theorem
4. Sturm's theorem
5. properties of quadratic equation
6. cubic formula
7. quartic formula
8. Abel's theorem
9. algebraic equation
10. square root of polynomial

11. *casus irreducibilis*
12. conditional congruence

Roots of polynomials

1. zero of polynomial
2. fundamental theorem of algebra
3. continuous dependence on coefficients
4. Tschirnhaus transformations
5. rational root theorem
6. polynomial equation of odd degree
7. Viète formulas
8. Descartes' rule of signs
9. Eisenstein criterion
10. zeros of polynomial derivative
11. homogeneous equation

Polynomials with special properties

1. zero polynomial
2. opposite polynomial
3. symmetric polynomial
4. monic polynomial
5. minimal polynomial
6. all one polynomial
7. <http://planetmath.org/PrimeFactorsOfXn1> prime factors of $x^n - 1$

8. primitive polynomial
9. homogeneous polynomial
10. weighted homogeneous polynomial
11. irreducible polynomial
12. irreducibility of binomials with unity coefficients
13. reciprocal polynomial
14. orthogonal polynomials

Classical orthogonal polynomials

1. Chebyshev polynomials
2. Hermite polynomials
3. Laguerre polynomials
4. Legendre polynomials
5. Jacobi polynomials
6. properties of orthogonal polynomials

Other polynomial families

1. Bernoulli polynomials and numbers
2. Bernoulli polynomials
3. Bernstein polynomials
4. <http://planetmath.org/node/12200>Boubaker polynomials
5. Euler polynomials
6. Lamé polynomials

Miscellaneous applications

1. Taylor polynomial
2. Characteristic polynomial in linear algebra (see also Cayley-Hamilton theorem)

Related concepts

1. division algorithm for polynomials
2. since sets of polynomial are rings, commutative algebra concepts like PID, UFD and Euclidean domains are heavily related
3. Gröbner basis