Why

The real polynomials are differentiable on all of **R**, and have simple derivatives.

Results

Proposition 1. *Suppose $p : \mathbf{R} \to \mathbf{R}$ is a real polynomial with coefficients $c_0, \ldots, c_1, \ldots, c_m$. Then p is differentiable and its derivative $p' : \mathbf{R} \to \mathbf{R}$ satisfies*

$$p'(x) = c_1 + 2c_2 x + 3c_3 x^2 + \cdots + mc_n x^{m-1}$$

Real Polynomial Derivatives

Real Polynomials

Real Arithmetic

Real Multiplicative Inverses

Real Products

Real Additive Inverses

Rational Multiplicative Inverses — Rational Arithmetic — Real Sums — Real Order

Rational Products — Rational Sums — Real Numbers — Rational Order

Rational Numbers

Natural Fractions

Integer Arithmetic

Natural Additive Identity — Natural Multiplicative Identity — Integer Products

Inverse Elements — Identity Elements — Natural Arithmetic

Function Inverses — Element Functions — Natural Powers — Integer Sums — Integer Order

Function Composites — Function Images — Operations — Natural Products — Integer Numbers — Comparisons

Functions — Natural Sums — Equivalence Relations — Orders — Converse Relations

Recursion Theorem — Relations — Natural Order

Peano Axioms — Ordered Pair Projections

Natural Induction — Set Products

Natural Numbers — Set Powers — Ordered Pairs

Set Partitions — Intersection of Empty Set — Successor Sets — Unordered Triples

Set Intersections — Set Symmetric Differences — Pair Unions

Pair Intersections — Set Complements — Set Unions

Set Differences — Empty Set — Unordered Pairs

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities — Sets

Names

Letters — Objects