Why

Is the sum of two differentiable functions differentiable? What is the derivative of the function which is their sum?

Result

Proposition 1. *Suppose $I \subset \mathbf{R}$ is an interval and $f, g : I \to \mathbf{R}$ are differentiable. Then $f + g$ is a differentiable function whose derivative is $f' + g'$*

Derivatives of Sums

Real Differentiable Functions

Real Functions

Intervals

Real Line

Real Order

Real Numbers   Rational Order

Integral Line   Rational Numbers

Integer Arithmetic

Natural Multiplicative Identity   Natural Additive Identity   Natural Fractions

Identity Elements   Natural Arithmetic   Integer Products

Natural Powers   Integer Sums   Integer Order

Operations   Natural Products   Integer Numbers   Comparisons

Functions   Natural Sums   Equivalence Relations   Orders   Converse Relations

Recursion Theorem   Natural Order   Relations

Peano Axioms   Ordered Pair Projections

Natural Induction   Set Products

Natural Numbers   Set Powers   Ordered Pairs

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

Geometry   Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Sets   Identities

Names

Letters   Objects

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