Why

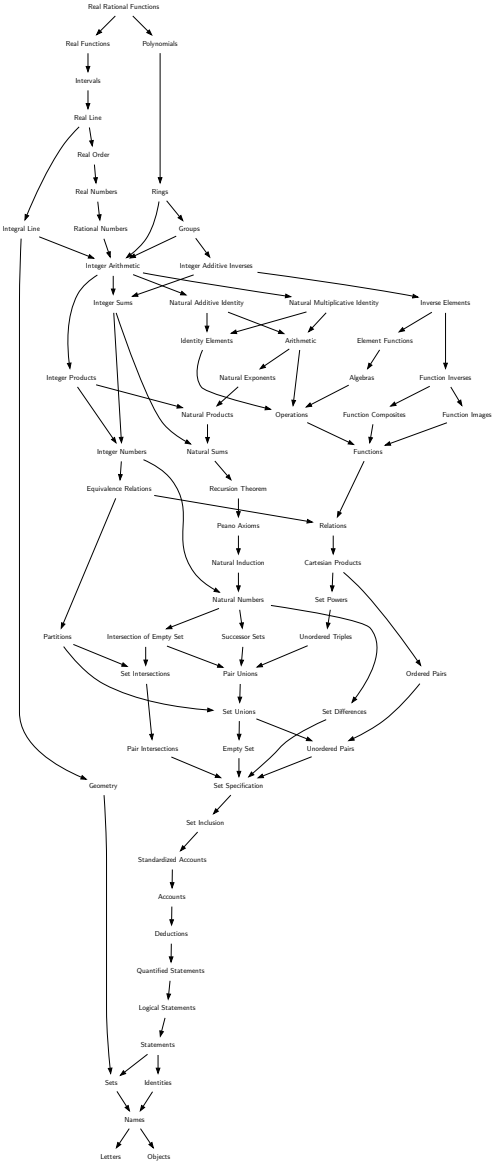
[1]

Definition

A *real rational function* (or *rational function*) is a function $f : \mathbf{R} \to \mathbf{R}$ for which there exists polynomials $a, b \in \mathbf{R}^d$ with corresponding polynomial functions $p : \mathbf{R} \to \mathbf{R}$ and $q : \mathbf{R} \to \mathbf{R}$ so that $f(x) = p(x)/q(x)$ for all $x \in \mathbf{R}$.

In this case we call a the *numerator polynomial* (and p the *numerator function*) and b the *denominator polynomial* (and q the *denominator function*). Of course, the language *rational* is in reference to the fact that if p and q are integer-valued functions, then the function f is a rational-valued function (see Rational Numbers).

[1] Future editions will include.


Real Rational Functions
Real Functions
Polynomials
Intervals
Real Line
Real Order
Real Numbers
Rings
Integral Line
Rational Numbers
Groups
Integer Arithmetic
Integer Additive Inverses
Integer Sums
Natural Additive Identity
Natural Multiplicative Identity
Inverse Elements
Identity Elements
Arithmetic
Element Functions
Integer Products
Natural Exponents
Algebras
Function Inverses
Natural Products
Operations
Function Composites
Function Images
Integer Numbers
Natural Sums
Functions
Equivalence Relations
Recursion Theorem
Peano Axioms
Relations
Natural Induction
Cartesian Products
Natural Numbers
Set Powers
Partitions
Intersection of Empty Set
Successor Sets
Unordered Triples
Set Intersections
Pair Unions
Ordered Pairs
Set Unions
Set Differences
Pair Intersections
Empty Set
Unordered Pairs
Geometry
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects