Why

What is the multiplicative inverse of $[(a, b)]$ in the rationals?

Result

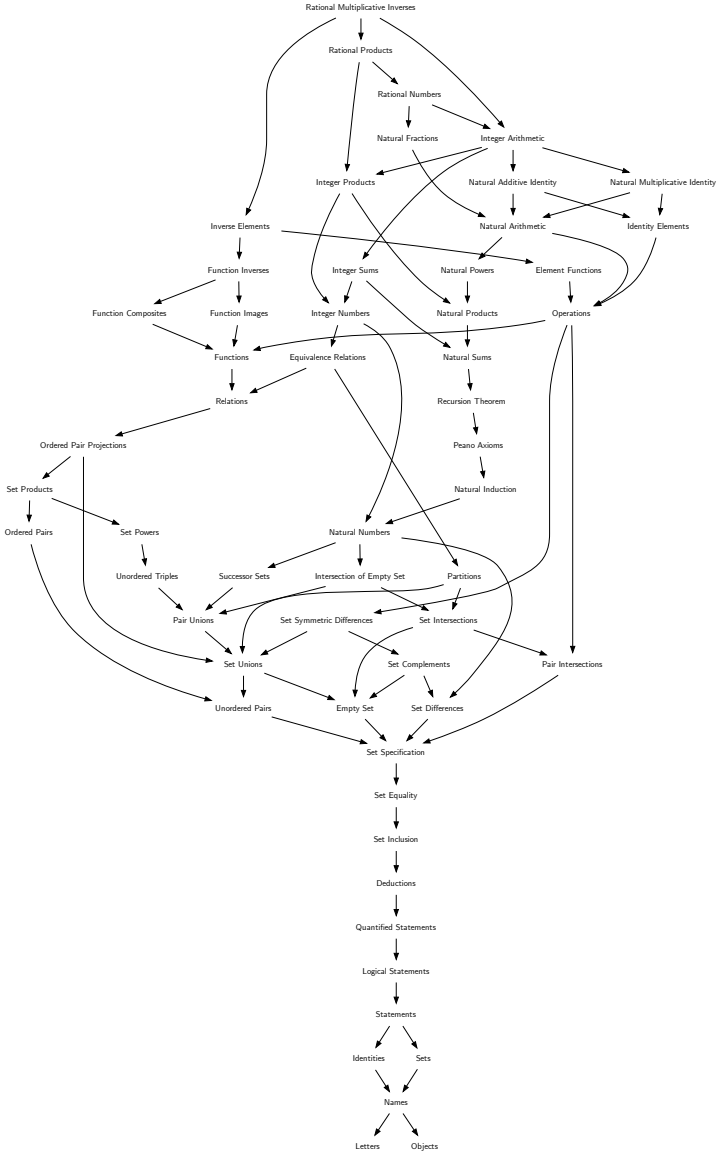
Proposition 1. *The multiplicative inverse of* $[(a, b)] \in \mathbf{Q}$ *if* $b \neq 0_{\mathbf{Z}}$ *is* $[(b, a)]$.

Notation

We denote the multiplicative inverse of $q \in \mathbf{Q}$ by q^{-1}. We denote $q \cdot (r^{-1})$ by q/r.

Division

We call the operation $(a, b) \mapsto a/b$ *rational division.*


Rational Multiplicative Inverses
Rational Products
Rational Numbers
Natural Fractions
Integer Arithmetic
Integer Products
Natural Additive Identity
Natural Multiplicative Identity
Inverse Elements
Natural Arithmetic
Identity Elements
Function Inverses
Integer Sums
Natural Powers
Element Functions
Function Composites
Function Images
Integer Numbers
Natural Products
Operations
Functions
Equivalence Relations
Natural Sums
Relations
Recursion Theorem
Ordered Pair Projections
Peano Axioms
Set Products
Natural Induction
Ordered Pairs
Set Powers
Natural Numbers
Unordered Triples
Successor Sets
Intersection of Empty Set
Partitions
Pair Unions
Set Symmetric Differences
Set Intersections
Set Unions
Set Complements
Pair Intersections
Unordered Pairs
Empty Set
Set Differences
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects