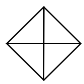


Why

Do the integer numbers correspond (in the sense *Homomorphisms*) to elements of the rationals.

Main Result

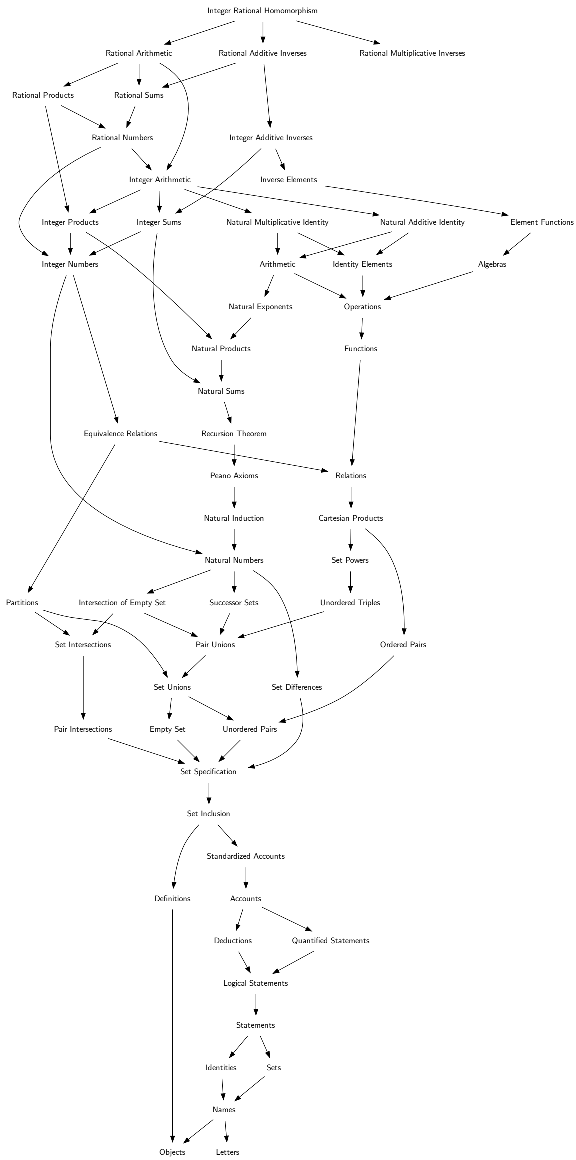
Indeed, roughly speaking the integers correspond to rationals whose denominator is 1. Denote by $\tilde{\mathsf{Q}}$ the set $\{[(a, b)] \in Q \mid b = 1_{\mathsf{Z}}\}$.

Proposition 1. *The rings* $(\tilde{\mathsf{Q}}, +_{\mathsf{Q}} \mid \tilde{\mathsf{Q}}, \cdot_{\mathsf{Q}} \mid \tilde{\mathsf{Q}})$ *and* $(Z, +_{\mathsf{Z}}, \cdot_Z)$ *are homomorphic.*[1]

Proof. The function is $f : \mathsf{Z} \to \mathsf{Q}$ with $f(z) = [(z, 1)]$.[2] $\square$

[1] Indeed, more is true and will be included in future editions. There is an *order perserving* ring homomorphism.

[2] The full account will appear in future editions.


Integer Rational Homomorphism
Rational Arithmetic
Rational Additive Inverses
Rational Multiplicative Inverses
Rational Products
Rational Sums
Rational Numbers
Integer Additive Inverses
Integer Arithmetic
Inverse Elements
Integer Products
Integer Sums
Natural Multiplicative Identity
Natural Additive Identity
Element Functions
Integer Numbers
Arithmetic
Identity Elements
Algebras
Natural Exponents
Operations
Natural Products
Functions
Natural Sums
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
Set Specification
Set Inclusion
Standardized Accounts
Definitions
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Objects
Letters