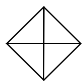


## Why

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

## Main Result

Indeed, roughly speaking the integers correspond to rationals whose denominator is 1. Define

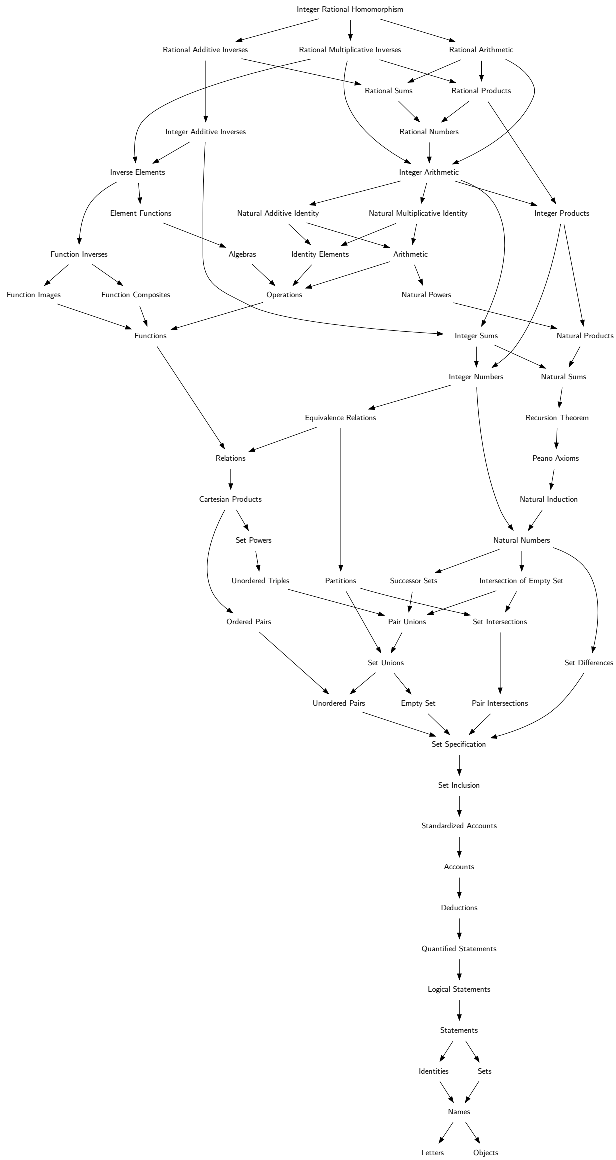
$$\tilde{Q} := \{[(a, b)] \in \mathsf{Q} \mid b = 1_{\mathsf{Z}}\}.$$

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

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

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