Why

What are addition and multiplication for rationals? What are the identity elements?

Definition

We call the operation of forming rationals sums *rational addition*. We call the operation of forming rational products *rational multiplication*.

Results

It is easy to see the following.[1]

Proposition 1. *The additive identity for* $\mathbf{Q}$ *is* $[(0_{\mathbf{Z}}, 1_{\mathbf{Z}})]$.

Proposition 2. *The multiplicative identity for* $\mathbf{Z}$ *is* $[(1_{\mathbf{Z}}, 1_{\mathbf{Z}})]$.

Notation

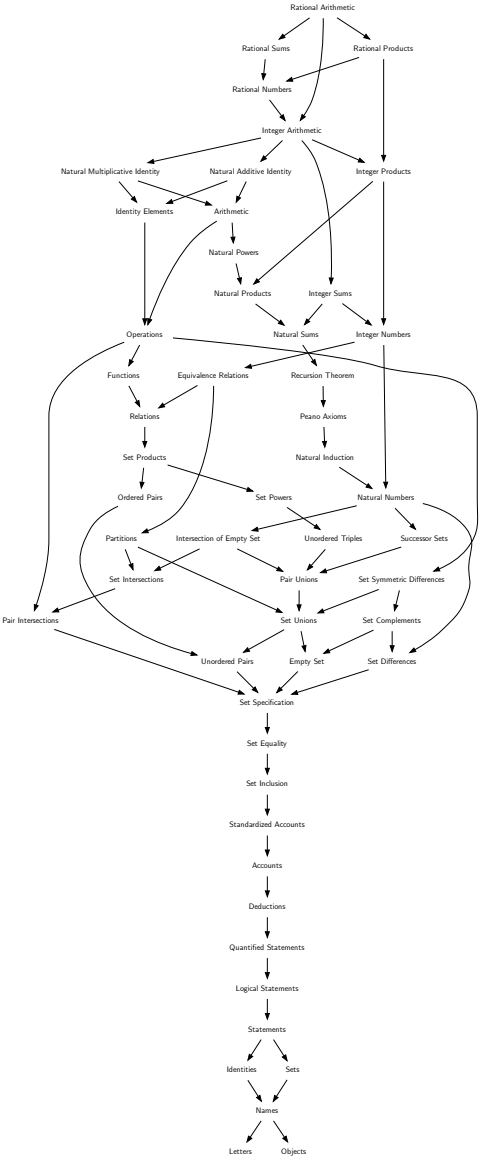
We denote the additive identity of $\mathbf{Q}$ by $0_{\mathbf{Q}}$ and the multiplicative identity by $1_{\mathbf{Q}}$. We denote the set $\{q \in \mathbf{Q} \mid q \geq 0_Q\}$ by $\mathbf{Q}_+$.

Distributive

Proposition 3. *For rationals* $x, y, z \in \mathbf{Z}$, $x \cdot (y + z) = x \cdot y + x \cdot z$.[2]

[1] Nonetheless, the full accounts will appear in future editions.

[2] An account will appear in future editions.


Rational Arithmetic
Rational Sums
Rational Products
Rational Numbers
Integer Arithmetic
Natural Multiplicative Identity
Natural Additive Identity
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Pair Unions
Set Symmetric Differences
Pair Intersections
Set Unions
Set Complements
Unordered Pairs
Empty Set
Set Differences
Set Specification
Set Equality
Set Inclusion
Standardized Accounts
Accounts
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Statements
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