Why

We want to multiply rationals.[1]

Definition

Let $[(a, b)], [(b, c)] \in \mathbf{Q}$. The *rational product* of $[(a, b)]$ with $[(b, c)]$ is $[(ac, bd)]$.[2]

Notation

We denote the rational product of $q, r \in \mathbf{Q}$ by $q \cdot r$.

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[1] Future editions will expand on this why.

[2] An account that this is well-defined will appear in future editions.

Rational Products

Rational Numbers

Integer Arithmetic

Natural Fractions

Integer Products

Natural Additive Identity

Natural Multiplicative Identity

Identity Elements

Natural Arithmetic

Integer Sums

Natural Powers

Integer Numbers

Natural Products

Operations

Equivalence Relations

Natural Sums

Functions

Relations

Recursion Theorem

Ordered Pair Projections

Peano Axioms

Set Products

Natural Induction

Ordered Pairs

Set Powers

Unordered Triples

Natural Numbers

Successor Sets

Intersection of Empty Set

Set Partitions

Pair Unions

Set Intersections

Set Symmetric Differences

Set Unions

Pair Intersections

Set Complements

Unordered Pairs

Empty Set

Set Differences

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities

Sets

Names

Letters

Objects