Why

We want to talk about which sets of points correspond to cubes in space.

Definition

A *cube* is a product of three intervals. Some authors use the term *box* or re-use the term *rectangle*. As with rectangles, we apply the adjectivies open, closed, left-open, left-closed accordingly.

Cubes

Rectangles

Real Space

Intervals

Real Line

Real Plane

Integral Line

Real Order

Geometry

Real Numbers

Rational Order

Rational Numbers

Lists

Integer Arithmetic

Set Numbers

Direct Products

Integer Products

Natural Additive Identity

Natural Multiplicative Identity

Finite Sets

Arithmetic

Identity Elements

Equivalent Sets

Family Unions and Intersections

Natural Powers

Integer Sums

Integer Order

Comparisons

Function Inverses

Natural Products

Integer Numbers

Orders

Operations

Function Images

Function Composites

Families

Natural Sums

Equivalence Relations

Natural Order

Converse Relations

Functions

Recursion Theorem

Peano Axioms

Ordered Pair Projections

Relations

Natural Induction

Set Products

Natural Numbers

Set Powers

Generalized Set Dualities

Set Symmetric Differences

Partitions

Intersection of Empty Set

Successor Sets

Unordered Triples

Set Dualities

Set Unions and Intersections

Set Complements

Set Intersections

Pair Unions

Ordered Pairs

Set Differences

Set Unions

Pair Intersections

Empty Set

Unordered Pairs

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Sets

Identities

Names

Letters

Objects