Why

How does arithmetic interact with integers.

Results

We can show the following.[1]

Proposition 1. *Let $a, b, c, d \in \mathbf{Z}$. If $a \leq b$ and $c \leq d$, then $a + b \leq c + d$.*

Proposition 2. *Let $a, b, c, d \in \mathbf{Z}$ with $a, b \geq 0_{\mathbf{Z}}$. If $a \leq b$ and $c \leq d$, then $a \cdot c \leq a \cdot d$.*

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[1]Accounts will appear in future editions.

Integer Arithmetic and Order

Integer Arithmetic

Natural Multiplicative Identity   Natural Additive Identity

Identity Elements   Arithmetic

Integer Products   Natural Powers

Natural Products   Integer Sums   Integer Order

Operations

Functions   Integer Numbers   Natural Sums   Orders

Equivalence Relations   Recursion Theorem   Natural Order

Relations   Peano Axioms

Natural Induction   Set Products

Natural Numbers   Set Powers   Ordered Pairs

Partitions   Intersection of Empty Set   Successor Sets   Unordered Triples

Set Symmetric Differences   Set Intersections   Pair Unions

Pair Intersections   Set Complements   Set Unions

Empty Set   Set Differences   Unordered Pairs

Set Specification

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Identities   Sets

Names

Letters   Objects