Definition

Let $a, b \in \mathbf{Z}$. a is a *divisor* of b if there exists $k > 0$ so that $ak = b$.

If instead $b = ak + r$ where $r > 0$ and $r < a$, then we call r the *remainder* of dividing a into b.

Notation

We denote the remainder of dividing a into b by $b \mod a$.

Integer Divisors

Integer Arithmetic

Natural Additive Identity   Natural Multiplicative Identity

Arithmetic   Identity Elements

Integer Sums   Integer Products   Natural Powers

Integer Numbers   Natural Products   Operations

Natural Sums   Functions   Equivalence Relations

Recursion Theorem   Relations

Peano Axioms   Ordered Pair Projections

Natural Induction   Set Products

Ordered Pairs   Natural Numbers   Set Powers

Successor Sets   Unordered Triples   Intersection of Empty Set   Partitions

Pair Unions   Set Intersections   Set Symmetric Differences

Set Unions   Set Complements   Pair Intersections

Unordered Pairs   Set Differences   Empty Set

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities   Sets

Names

Letters   Objects