



Why

We name the operations which produce natural sums, products and powers.

Definition

Consider the set of natural numbers. Then we can define three functions corresponding to sums, products and powers which are operations (see **Operations**) on this set.

We call *addition* the function $+: \omega \times \omega \rightarrow \omega$, which maps two natural numbers m and n to their sum $m + n$. We call *multiplication* the function $\cdot: \omega \times \omega \rightarrow \omega$, which maps two natural numbers m and n to their sum $m \cdot n$. We call *exponentiation* the function $(m, n) \mapsto m^n$.

In other words, we can think of sums, products, and powers as obtainable by applying a function to pairs of natural numbers. This function gives another natural number. We call these three operations the operations of *arithmetic*.

