



INTEGER PRODUCTS

Why

We want sums to follow those of natural numbers.¹

Definition

Consider $[(a, b)], [(b, c)] \in \mathbf{Z}$. We define *integer product* of $[(a, b)]$ with $[(b, c)]$ as $[(ac + bd, ad + bc)]$.²

Notation

We denote the product of $[(a, b)]$ and $[(c, d)]$ by $[(a, b)] \cdot [(b, c)]$

So if $x, y \in \mathbf{Z}$ then the sum of x and y is $x \cdot y$.

¹Future editions will modify this.

²One needs to show that this is well-defined. The account will appear in future editions.

