



## INTEGER ARITHMETIC AND ORDER

### Why

How does arithmetic interact with integers.

### Results

We can show the following.<sup>1</sup>

**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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<sup>1</sup>Accounts will appear in future editions.



