0.1 Inequalities

0.1.1 Less than or equal

Orderings define relations between elements in a set, where one element can preceed the other.

Orderings are antisymmetric. That is, the only case where the relation is satisfied in both directions is if the elements are equal.

$(a \leq b) \wedge (b \leq a) \rightarrow (a = b)$

Orderings are transitive. That is:

$(a \leq b) \wedge (b \leq c) \rightarrow (a \leq c)$

0.1.2 Greater than or equal

0.1.3 Less than and greater than

The relation $\leq$ is refered to as non-strict.

There is a similar strict relation relation, $<$:

$(a \leq b) \wedge \check{\text{n}}(b \leq a) \rightarrow (a < b)$