

Universal Algebra 1 - Homework 2

Deadline 15.11.2018, 10:40

1. (8 points) Determine all the subalgebras and congruences of $(\mathbb{N}, *)$ where $x * y = \max(x, y) + 1$. Draw the lattices Sub and Con.
2. (8 points) Let \mathbf{G} be a group. Prove that there is a lattice isomorphism between the lattice of normal subgroups of \mathbf{G} and the lattice of congruences of \mathbf{G} .
3. (6 points) Describe all the homomorphisms from (\mathbb{N}, \cdot) (where \mathbb{N} consists of the natural numbers without 0) to $(\mathbb{Z}_3, +)$