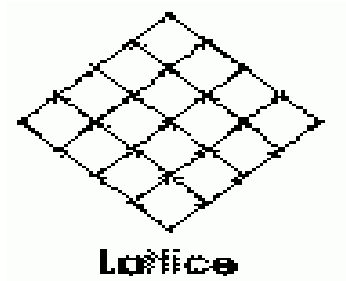# Introduction to the Mathematics

Lattice

Brief Overview of Lattice Theory:

Jonathan Farley's area of research is Lattice Theory. Lattice theory is a branch of abstract algebra. It deals with partially ordered sets. First of all, a partially ordered set is a set P with a binary relation, which we denote . The partially ordered set is reflexive, transitive, and anti-symmetric. A lattice is a partially ordered set such that any two elements x and y have a least upper bound and a greatest lower bound. In the case of the power set lattice, the union of two sets is their least upper bound. The intersection is the greatest lower bound. Lattice theory has real-life applications in cryptology.