

# Finite Bases of Quasi-equations of Unary Algebras: How Few Rules Can We Get Away With?

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## Abstract

The associative, distributive, commutative, negation and identity laws (equations) for the integers are fundamental to our understanding of the integers. From childhood we “know” that everything follows from these laws. When we move to another algebraic structure a natural question is to ask what are the equations that hold and from which equations does everything else follow?

When we allow for implications as well as equality we are considering expressions called quasi-equations. Sometimes when working with small algebraic structures with, say, 4 or 5 elements, our natural instinct that a few quasi-equations are sufficient to imply all quasi-equations is true. In other instances we require infinitely many quasi-equations to generate all quasi-equations.

In this talk we see the variety of results that can arise in the seemingly simple situation of quasi-equations of small algebraic structures with only unary operations.