

# Homework 1: Abstract

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**Link: The Algebra of Algebraic Data Types, Part 1**

## Abstract

This article examines the concept of algebraic data types in the programming language Haskell, and how they relate to the algebra from high school mathematics. It explains the three parts of a mathematical algebra - objects, operations, and laws - and examines how these three parts are implemented in the algebra of Haskell types. The article explains how to count the possible values of a type and how to use operators such as 'Add' and 'Mul' to create types from existing types. Additionally, the article discusses the laws that exist in the algebra of Haskell types and provides examples of how to prove the validity of these laws. Finally, the article examines the concept of function types and the laws that exist for functions.