

SOEN331: Introduction to Formal Methods for Software Engineering

Assignment 4 on algebraic specifications

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Spec: Set (Element);

Sort: Set;

Imports: Boolean, \mathbb{N}_0 ;

Operations:

newset \rightarrow Set;

add : Set \times Element \rightarrow Set;

remove : Set \times Element \rightarrow Set;

size : Set $\rightarrow \mathbb{N}_0$;

isempty : Set \rightarrow Boolean;

ismember : Set \times Element \rightarrow Boolean;

Variables:

s: Set; x, y: Element;

Axioms:

[A1] isempty(newset) = true;

[A2] ismember(newset, x) = false;

[A3] ismember(add(s, x), x) = true;

[A4] add(add(s, x), y) = add(add(s, y), x);