Summary of Halmos' Naive Set Theory

Robin Adams

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Chapter 1

The Axiom of Extension

Let there be *sets*. We assume that everything is a set.

Let there be a binary relation of *membership*, $\in$. If $x \in A$ we say that x *belongs* to A, x is an *element* of A, or x is *contained* in A.

Axiom 1.0.1 (Axiom of extension)**.** *Two sets are equal if and only if they have the same elements.*

Definition 1.0.2 (Subset)**.** Let A and B be sets. We say that A is a *subset* of B, or B *includes* A, and write $A \subset B$ or $B \supset A$, iff every element of A is an element of B.