

# Summary of Halmos' Naive Set Theory

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