

Re: Questioning the definitions of set and element.

Re: Questioning the definitions of set and element.

Source: <http://sci.tech-archive.net/Archive/sci.math/2008-05/msg00115.html>

- *From:* "Mark" <user@xxxxxxxx>
 - *Date:* Thu, 1 May 2008 16:47:30 +0100
-

"Arturo Magidin" <magidin@xxxxxxxxxxxxxxxxxxxx> wrote in message [news:fvck0e\\$25pn\\$1@xxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:fvck0e$25pn$1@xxxxxxxxxxxxxxxxxxxxxxxx)

In article <[AijSj.861\\$NZ7.158@xxxxxxxxxxxxxxxx](mailto:AijSj.861$NZ7.158@xxxxxxxxxxxxxxxx)>, Mark <user@xxxxxxxx> wrote:

"David C. Ullrich" <dullrich@xxxxxxxx> wrote in message news:k0fj14lbq30cmomiaoc1f513b35bu53jr@xxxxxxxx

On Thu, 1 May 2008 12:55:46 +0100, "Mark" <user@xxxxxxxx> wrote:

Hi, most definitions of element and set I have come across, say something like,

An element is any object of our perception or of our thought.

You found this definition where, exactly?

In formal set theory the notions of "is a set" and "is an element of" are `_undefined_`.

A set is a collection of unique elements.

So what's a collection?
Wolfram says it's a multiset.
Wiki says it's a multiset.

So what's a multiset?
Wolfram says it's a set-like object.
Wiki says it's a generalization of a set.

Re: Questioning the definitions of set and element.

This basically gives the following definitions.

A multiset is a collection of elements
A set is a multiset of unique elements.

So what's a collection?
Would this be a good definition of collection,
A collection is any elements which have something in common.

Or could someone give a better definition?

From, "Discovering Modern Set Theory by Winfried Just, Martin Weese, American Mathematical Society"

This is not presenting a "definition" in the sense of a mathematical definition; rather, it is presenting an informal idea that is what they will be attempting to model formally.

In other words, a definition.

"By a "set" we mean any collection M into a whole of definite, distinct objects m (which are called the "elements" of M) of our perception or of our thought." – Cantor

You do know it's been well over 100 years since then, and that everyone uses formalizations of set theory that were created well after Cantor, right?

Yes.

As David Ullrich notes, after the advent of Hilbert and metamathematics, it is now understood that the basic notions of an axiomatic theory, the "primitive notions" are \rightarrow undefined \leftarrow . The axioms and rules describe what we can do with them, but those primitive notions do not have a definition.

Re: Questioning the definitions of set and element.

Re: Questioning the defintions of set and element.

He didn't note anything about Hilbert or metamathematics.

[snip N/A stuff]

I don't see how a logical theory can be based on the undefined.

Are you trying to tell me that *you* cannot explain to someone else what an element or a set is?

If you can, then surely you must agree that you have defined them.

.