

Re: The Difference between a Set and an Element

Source: <http://sci.tech-archive.net/Archive/sci.logic/2007-01/msg00197.html>

- *From:* "Peter_Smith" <ps218@xxxxxxxxxx>
 - *Date:* 11 Jan 2007 10:20:49 -0800
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Nam D. Nguyen wrote:

Chris Menzel wrote:

On Wed, 10 Jan 2007 18:01:50 GMT, Nam Nguyen
<namducnguyen@xxxxxxx> said:

Chris Menzel wrote:

On Wed, 10 Jan 2007 16:05:05 GMT, Nam
Nguyen <namducnguyen@xxxxxxx>
said:

Frederick Williams wrote:

george
wrote:

JohnCreighton_@xxxxxxxxxxxx
wrote:

Frederick
Williams
wrote:

....
What
is
the
physical
difference
between
me
and
a
set
containing
me?

Re: The Difference between a Set and an Element

The
difference
is
that
you
exist
and
the
set
containing
you
does
not.
This
allegation
that
sets
can
contain
concrete
objects
is
misleading.
Sets
are
abstract.

May not a
set theory
with
urelemente
have a
person
among its
urelemente?

I think you meant "... an
abstraction of a person
among its
urelemente?" Mathematics
is abstract. Period.

Well, granted, it makes life much easier just
to stipulate that things
are thus and so, PERIOD, because that's just
what your gut tells you,
but there is nothing whatever about set
theory or mathematics generally
that would prevent honest to God flesh and
blood persons from serving as
legitimate urelements.

Re: The Difference between a Set and an Element

You are right: I just forgot the basic math that the natural numbers are made of hydrogen atoms and this is why they're so light that they float around in the mind!

An excellent argument! Nearly as cogent as "<random claim> PERIOD"! I bow to you, sir; clearly, you have reduced my argument to absurdity.

<quote>

Logic is the study of reasoning; and mathematical logic is the type of reasoning done by mathematicians. To discover the proper approach to mathematical logic, we must therefore *examine the methods of the mathematician*.

The conspicuous feature of mathematics, as opposed to other sciences [including say physics, chemistry, or biology, ...] is the use of proofs instead of [physical] observation. A physicist may prove physical laws from other physical laws; but he usually regards agreement with observation as the ultimate test of a physical law. A mathematician may, on occasions, use observation; for example, he may measure the angles of many triangles and conclude that the sum of the angles is always 180 degree. However, he will accept this as a law of mathematics only when it has been proved.

Nevertheless, it is clearly impossible to prove all mathematical laws. The first laws which one accepts cannot be proved, since there are no earlier laws from which they can be proved. Hence we have certain first laws, called axioms, which we accept without proof; the remaining laws, called theorems, are proved from the axioms.

For what reasons do we accept the axioms? We might try to *use observation* here; but this is not very practical and *is hardly in the spirit of mathematics*. We therefore attempt to select as axioms certain laws which we feel are evident from the nature of the *concepts* involved.

We thus have a reduction of large number of laws to a small number of axioms. A rather similar reduction takes place with mathematical *concepts*. [...] We therefore have certain *concepts*, called *basic concepts*, which are left undefined; the remaining *concepts*, called *derived concepts*, are defined in term of these. [...] We have a criterion for basic *concepts* similar to that for axioms: they should be so simple and clear that we can understand them without a precise definition. [...]

Hence we may suppose that all the *concepts* which appear in the axioms are basic *concepts*

[...]

</quote>

Shoenfield, Mathematical Logic, Chapter 1, "The Nature of Mathematical logic".

Re: The Difference between a Set and an Element

You wouldn't disagree with me that mathematical concepts are abstract, right? My somewhat-naive-understanding-of-the-subject assertion that "Mathematics is abstract. Period." simply asserts what I believe as a fact of mathematical reasoning; and, from Shoenfield's passage above, it doesn't appear to be a "random" idea, as you seem to have alluded to. So, Dr., instead of making me feel humbled – being bowed to – perhaps you could explain why concepts which are *abstract* can be *concrete physical entities*, such as "flesh and blood persons". Or is that just a random and unprovoked reaction of yours?

There is nothing in Shoenfield's remarks that rules out ZU. The concept of *set* can be as he says fundamental mathematical concepts should be: that doesn't stop the members of sets being as concrete as you like.

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