Re: Inconsistency of the usual axioms of set theory

Source: http://sci.tech−archive.net/Archive/sci.math/2009−03/msg02567.html

- *From*: "Jesse F. Hughes" <jesse@xxxxxxxxxxxxx>
- *Date*: Fri, 20 Mar 2009 08:12:59 −0400

lwalke3@xxxxxxxxx writes:

> On Feb 22, 7:55 pm, Tim Little <t...@xxxxxxxxxxxxxxxxxx> wrote:
>
> > On 2009−02−22, amy666 <tommy1...@xxxxxxxxxxx> wrote:
> >
> > > davids definition is not wrong. but it leads to N.
> > > so im not "babbling".
> >
> > Can you prove from ZF without the axiom of infinity, that "there
> > exists a Dedekind−infinite set" implies the existence of N?
> > Or are you just babbling?
>
> OK, I was away from sci.math back in late February, thus I
> haven't keep up with this thread.
>
> In another thread, Aatu proved that in the theory
> ZF−Infinity, one can prove that "there exists an infinite
> set" implies "omega exists." MoeBlee confirmed the
> correctness of the proof, which depends on the axioms of
> Powerset and Replacement Schema.
>
> Then I pointed out that even with Aatu's proof, someone
> would eventually question whether the existence of any
> infinite set implies the existence of omega. And sure
> enough, this is exactly what Little has done.

You seem to be confused.

Tommy insinuated that the *definition* of infinity (not the axiom, but the definition) "leads" to N. Evidently, he meant that one can prove N exists just by defining infinity. (If he meant something else, I don't know what.)

Tim is asking something else entirely. He is asking whether a

particular axiom of infinity (different than the most usual axiom) implies the existence of N.

Tim's question does not make Tommy's strange claim retroactively respectable.

You do understand that Dedekind−infinite is not the same term as infinite, right?

−−
Jesse F. Hughes
"Basically there are two angry groups. I am a harsh force of one. Against me is a society of mathematicians. So far it's been a draw." −− JSH gives another display of keen insight.
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