Re: Implementable Set Theory and Consistency of ZFC

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- *From*: Han de Bruijn <Han.deBruijn@xxxxxxxxxxxxxx>
- *Date*: Wed, 31 Oct 2007 14:12:39 +0100

Jesse F. Hughes wrote:

> Han de Bruijn <Han.deBruijn@xxxxxxxxxxxxxx> writes:
>
> > So, even if I don't make use of (5−8), a proof of A from (1−4) is a proof from (1−8) ?
>
> Of course.
>
> > So, even if I say "there exists a Foo", then such a statement is a valid premise for proving that the integral of 1/t from 1 to x is ln(x) ? Weird ..
>
> The statement can be proved in the theory consisting of the usual axioms for real analysis and "there exists a Foo", yes. Do you think that every theorem of ZFC uses every axiom of ZFC in its proof?

It seens we have a different picture in our mind about the meaning of an implication A => B , as has been pinpointed by Ullrich as well. This is what I say about in in my article:

> Another philosophical note is in place, when we are saying that we "make with an axiom" and denote this as an implication A => B. In common mathematics, the implication => just means what is de ned by a truth table in propositional logic. But there is another form of mathematics, called constructivism. Within constructivist mathematics, an implication has a more "operational" meaning, like: given A, we can construct B from A. So if we say "make with an axiom", then it is expressed herewith that we adhere to the constructivist meaning of an implication. End of philosophical note.

I think that you and Ullrich adhere to the common "material implication" of mathematical logic, where there is no place for axioms that "cause" a theorem (so to speak). In the latter sense there is no room for premises like "there exists a Foo". The axiom of Infinity is of the latter kind.

Han de Bruijn

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