

Re: the need for relevance

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Jesse F. Hughes wrote:

Han de Bruijn <Han.deBruijn@xxxxxxxxxxxxxxxx> writes:

Jesse F. Hughes wrote:

So, the set of natural numbers does not contain every natural number?

THE set of natural numbers does not even exist.

Well then what the heck is N? You *do* use N as a constant term, right? What does it mean to you?

Here's a sentence: "N is not a completed set." Is that sentence true, false or meaningless? How about the sentence "N is a set."?

[...]

Please tell me if you agree with each of the following.

- (1) When I write "N", I mean the set of natural numbers.
- (2) Every element of N is a natural number.
- (3) Despite the fact that N is *the* set of natural numbers, there are some natural numbers which are not elements of N.

Or, if you prefer (though I don't):

- (1) When I write "N", I mean the set of natural numbers, but this set changes over time.
- (2) Every element of N is a natural number.
- (3) At any time, there are some natural numbers which are not elements of N.
- (4) If n is an element of N at time t, then n is an

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element of
N at
every later time.

Why do you insist that natural numbers SHOULD BE in A SET? I don't!

Fine. What does the term N denote?

Do you likewise insist that all infinite ordinals are in a set? Huh?

Of course not, but I do sometimes use the term Ω to denote the class of ordinals. If someone asks me what Ω denotes, I can answer the question.

Here we are! Now sink just one level deeper, do the same thing with N, and we're on speaking terms. Suppose that N is the class of naturals.

Happy with that conclusion?
This is your method, yes?

Not happy with your conclusion. But
happy with my method.

Could you tell me what your method is, because I apparently don't understand? I have a statement P and N. How do I tell if P is true or false? Does it depend on time? There is some number n which is not in N today. Maybe it's $10^{10^{10^{10^{\dots^{10}}}}$. Could it be in there tomorrow?

Those questions all appear irrelevant to me.

You say you're happy with your method, but it's irrelevant what your method is? Er, okay.

Here's a couple of questions.

Is N a meaningful term? Given a formula P with a single free variable

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X, let $P(N)$ be the result of substituting N for X throughout P . Is $P(N)$ a sentence (i.e., is $P(N)$ a statement which is either true or false)? What is the meaning of $P(N)$? How do I determine whether $P(N)$ is true or false?

Are all of these questions irrelevant too?

No. If you are prepared to go along with me and define N as a class.

Han de Bruijn

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