Re: The infintely small number b

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- *From*: Venkat Reddy <vreddyp@xxxxxxxxx>
- *Date*: Fri, 23 Nov 2007 06:07:41 −0800 (PST)

On Nov 23, 2:16 am, Marshall <marshall.spi...@xxxxxxxxx> wrote:

> On Nov 22, 9:16 am, Venkat Reddy <vred...@xxxxxxxxx> wrote:
>
>> Yes I understand that. But we are trying to find the inclusive bounds for that open set D, and they are not in R according to you. I would like to correct you here. They are still in R but we just can't know them. As we knew, it boils down to the fact of not being able to navigate from a point to next one.
>
> Let P(x) mean that x is a real number greater than 0:
>
> 1) for all x, P(x) if and only if (x > 0 and
> x is a real number)
>
> We call some l a lower bound of some P
> if for every x that satisfies P(x), l <= x.
> We call some lower bound l of P an
> inclusive lower bound if P(l).
>
> Assumption A) the inclusive lower bound l of P exists:
>
> A1) exists l, P(l).
> A2) for all x, P(x) means l <= x.
>
> Let m = l/2
>
> Since P(l), l > 0. Division of nonzero numbers is closed
> over the reals, so m is real. For all x, x > 0 means
> (x/2) > 0, so m > 0. m is real and m > 0, so P(m)
> from 1).
>
> However, m < l, which contradicts 2). Since we have
> reached a contradiction starting from our assumption,
> our assumption must be false. Therefore l does not

> exist.
>
> This proves that there exists a quality of the real
> numbers, namely P, for which there is no smallest
> number exhibiting that quality.

So, P is a quality where P(x) means x is a real number greater than 0. And you have proved that there is no smallest number exhibiting that quality.

If we remove the redundant words from the above, you mean to say there is no smallest number greater than 0. This could have been much simpler to proove. So you mean this proof contradicts my saying that smallest number exists in R. Fine. Thats not my core argument, anyway.

My argument was − every finite interval in continuum (not modeled with single kind of points or numbers yet) always has its bounds just like any other finite interval. There are no multiple types of bounds. It doesn't matter whether your "next points" exist or not, or whether your smallest number exists or not.

− venkat

> It does so without recourse
> to any geometry or set theory. Just high school math.
> Note that this doesn't prove that we "can't know" l;
> it actually proves that there is no l.
>
> Your comments?
>
> Marshall

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