

Re: INFINITY Revisited

Source: <http://sci.tech--archive.net/Archive/sci.math/2005-09/msg00563.html>

- *From:* iminatorium@xxxxxxxxxxxxxx
 - *Date:* 2 Sep 2005 20:48:49 -0700
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Don Whitehurst wrote:

- > What is the difference between a digit string and a character sting?
- > How do the infintesimals 0.00...01 not meet the meaning of a "decimal digit at digit position n for each position n"? Is it because there is
- > no last n in the naturals?

Basically yes (you've answered your own question). The idea of a nonterminating decimal fraction is that it, uh, has no end (which is what 'nonterminating' means, of course). For some reason, lots of people have terrible difficulty with this – they have never (obviously) in real life encountered something which extended linearly to left and to right, without having an end at the left and an end at the right. So when we say, consider the naturals as the unending sequence

0, 1, 2, 3, 4, ...

where the dots represent the fact that this extends endlessly to the right, all goes well for about one or two sentences, then they start talking about the rightmost element. Well, with luck, you can see that this is nonsense.

Incidentally, your first question above isn't *_quite_* right. Dave Seaman said "those are character strings", but of course so are the valid representations of real numbers. He might more helpfully have said "Those are merely character strings (with no interpretation as real numbers)". The fact that one can string symbols together is no guarantee that they mean anything, as witness large quantities of word salad one sees in sci.math threads.

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- *References:*
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Re: INFINITY Revisited

◇ *From:* Don Whitehurst

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