

## Re: Problems I have with $1.999\dots=2$

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*Source:* <http://sci.tech-archive.net/Archive/sci.math/2005-05/msg01975.html>

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- *From:* [stephen@xxxxxxxxxxx](mailto:stephen@xxxxxxxxxxx)
  - *Date:* 11 May 2005 03:09:20 GMT
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Kirby Cook <kwmcook@xxxxxxxxxxx> wrote:  
: Richard Tobin wrote:

:> In article <[1Z9ge.12093\\$U01.10469@trnddc07](mailto:1Z9ge.12093$U01.10469@trnddc07)>,  
:> Kirby Cook <kwmcook@xxxxxxxxxxx> wrote:  
:>  
:>  
:>>The assertion that the sum is infinite means, to me, that there is no  
:>>point where it will equal 1 and be, therefore, finished, and finite.  
:>  
:>  
:> No.  
:>  
:> The term "infinite sum" is shorthand for "the limit of the infinite  
:> sequence of partial sums". The infinite sequence is indeed never  
:> finished, but the infinite sum is not the infinite sequence, it is the  
:> limit of it, which in this case is 1.  
:>  
:> As far as I am aware, 1 has been finished and finite for some time now.  
:>  
:> -- Richard

: Let me try it another way. My assertion might be stated (I hope) as  
: follows. Given the set whose elements are nine tenths, nine tenths plus  
: nine hundredths, nine tenths plus nine hundredths plus nine thousandths,  
: etc., the least upper bound of the set is one, and one is not a member  
: of the set.

That is true. 1 is not a member of the set { .9, .99, .999, ... }.  
But if .999.... is a set, then it is not a number,  
and the question does  $1=.999\dots$  does not make much sense.  
If you interpret .999.... as a number, which is what most people  
do, then you really do not have a lot of choices about what number  
it is.

Stephen

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- **Follow-Ups:**

- ◆ **Re: Problems I have with 1.999...=2**  
◇ From: Kirby Cook
- ◆ **Re: Problems I have with 1.999...=2**  
◇ From: Sevenhundred Elves
- ◆ **Re: Problems I have with 1.999...=2**  
◇ From: Robert Kolker

- **References:**

- ◆ **Problems I have with 1.999...=2**  
◇ From: Kirby Cook
- ◆ **Re: Problems I have with 1.999...=2**  
◇ From: stephen
- ◆ **Re: Problems I have with 1.999...=2**  
◇ From: Kirby Cook
- ◆ **Re: Problems I have with 1.999...=2**  
◇ From: Richard Tobin
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◇ From: Kirby Cook

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