

## Re: .999... ?= 1

**Source:** <http://sci.tech-archive.net/Archive/sci.math/2004-06/1589.html>

---

**From:** Robin Chapman (*rjc\_at\_ivorynospamtower.freemove.co.uk*)

**Date:** 06/09/04

Date: Wed, 09 Jun 2004 07:56:24 +0100

Eckard Blumschein wrote:

> *Dik T. Winter wrote:*

>

>> *Depends on what you define as a number (I have not seen a definition in  
>> this thread yet),*

>

> *Being a layman, I looked for such definition and was disappointed, too.*

You won't find a definition of a number: you will find definitions of real numbers, rational numbers and complex numbers. It is a historical accident that, for instance, the complexes are regarded as "numbers" but the quaternions usually are not.

>

> *I naively imagine the reciprocal of a number might be related to but not  
> the same as the reciprocal of a function or a graph.*

category mistake: functions have (well they usually don't) inverses, not reciprocals.

> *I also wonder why Fourier transform of a continuous periodic function  
> (aleph2) consists of discrete values (aleph1) and vice versa no matter  
> whether or not it is complex-valued.*

If one wish to take Fourier transforms of periodic functions one needs to work within the space of tempered distributions.

> *I merely found this within at least one book on Cauchy(?) written as or  
> more likely based on a thesis by an outsider. Don't ask me which one.  
> Also I was told that zero is not necessarily a number, and if I recall  
> correctly, I found that zero is the only infinitesimal within the  
> hyperreal numbers.*

You probably don't (it's not true).

--

Robin Chapman, [www.maths.ex.ac.uk/~rjc/rjc.html](http://www.maths.ex.ac.uk/~rjc/rjc.html)

"Lacan, Jacques, 79, 91-92; mistakes his penis for a square root, 88-9"

sci.math: Re: .999... ?= 1

Francis Wheen, How Mumbo-Jumbo Conquered the World