Re: .999... ?= 1

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Eckard Blumschein wrote:
> Lothar Brendel wrote:
>
>
>>> I see zero having three aspects of equal value but different sign:
>>> minus 0.0 over bar
>>> just zero
>>> plus 0.0 over bar.
>>
>> −0 = 0 = +0, no problem.
>>
>>> Both the negative and the positive description, from the left and
>>> from the right, respectively are identical with just zero.
>>
>> Exactly.
>
> Aren't you a bit careless? I wrote three aspects.

And once again, "aspect" is not a mathematical concept. How do you
define the "aspect of a number"?

> You wrote −0 = 0 = +0.

Yes, because that are three expressions of zero (the middle one being
the generic one). I may add further ones: 0*0, 1−1, ...
Trying to assign different properties to the same number is bogus.

> You further wrote:
>
>> The middle one is the same number as the other two. You could as well
>> suggest to dispose "just zero" and use 1−1 everywhere.
>
> While I do not expect people like Chapman who are specialized in theory
> of numbers fighting for what they were thought by all means.

They have other, more profound reasons to reject your string of words
full of math terms.

> I hope you
> will be more independent, in principle.

I won't be independent of logic, as you obviously are.

> Do not consider it an attack on
> numbers like 0 and 1 if I try to add some subtleties.

The subtleties are already there, you should try to understand them before trying to declare further ones, which are in fact only clashes with your imagination of mathematical objects.

> Since language of
> mathematics has failed for centuries to satisfactory resolve the issue,
> it might be worth pondering about alternatives.

This "issue" is by no means a problem (you were never be able to construct a mathematical inconsistency from it). Why solving a non−problem?

> What does +0 mean?

How does +6 differ from 6?

> How does it differ from −0?

Not at all, since −0 is short for −1*0 which equals 0.

Or do you think of +0 something like "the smallest number larger than zero". Alas, such a number cannot exist.

> We agree about the identity of their value zero,
> no matter whether it is seen from the left or from the right.

I don't see you agreement. You try to assign different properties to the same number through different "names". Does that applies also to zeros printed in different colors?

> While +0 > 0 > −0 would be a contradiction to the meaning of infinity,

Forget about infinity for a moment, your statement is wrong on a much simpler basis. Namely, +0 = 0 = −0 and "=" and ">" are mutually exclusive.

> 0 is still located between +0 and −0.

Is 6 also located between 6 and 6?

> Within IR+ you cannot see zero from the left. So one aspect is missing.

You are missing the aspect that you are once again talking non−math. "Seeing a number" is not a mathematical concept, but your invention. How do you _define_ the operation "seeing a number"?

> *However, there is no compelling reason to exclude zero itself from Q+.*

Hell! Zero is excluded _by_defintion_ from Q^+. Whoever doesn't like that, can use Q^+ U {0}, sometimes written as Q^+0.

> *Likewise, +0 is missing within Q− but this does not imply that zero*
> *itself must be excluded.*

Why can't you understand that Q^− is _defined_ to be the set of positive rationals? And positive means >0 and since 0=0 instead of 0>0, 0 is not _contained_ in Q^−.

What the heck will you try to tell us next? "Why primes should be divisible by 2."

> *Common decimal notation incorporates zero into*
> *Q+ as well as into Q−*

It does not!

Q^+ is defined as e.g. in http://mathworld.wolfram.com/Q−Plus.html

[...]

>>> *To my understanding, a continuum is infinitely fine grained in the*
>>> *sense, it cannot be resolved into a finite number of elementary numbers.*
>>
>> *_Your_ understanding, _your_ imagination of a continuum has nothing to*
>> *do with the continuum defined in math.*
>
> *Indeed, I didn't find yet much corresponding mathematical definition of*
> *a continuum.*

What's wrong with "the nondenumerable set of real numbers"?

> *Aleph−1 is an undecidable proposition within the tenets of*
> *Cantor's set theory.*

So what? What specific problem does this produce when calculating with real numbers in applications?

> *I see a key problem hidden within the notion of a*
> *set: x€A.*

Sure, Eckard, that's a very deep problem of set theory: Sets can contain elements. Wow!

> *While set theory arbitrarily assumes the existence of an empty*
> *set, I wonder why it does not mention its reciprocal.*

Simply because a reciprocal of a set is not defined! Real numbers e.g. have reciprocals, Eckard, sets in general have _not_. That's another good example of your lack of mathematical knowledge.

> There are genuine infinitesimals:
>
> http://mathworld.wolfram.com/NonstandardAnalysis.html
>
> Wolfram gives continuity as follows:

_I_ know the defintion of continuity, no need to paste it here. But what does it have to do with nonstantard analysis?

[...]

>>> In other words, nobody should hesitate cutting straight through any
>>> real number without harming it since two of the three aspects still
>>> remain undamaged.
>>
>> Once again, "cutting numbers" is no mathematical concept, but a
>> picture made up by you. How do you _define_ the mathematical operation
>> of "cutting a number"?
>
> I wrote cutting through a "real number", not through a number.

Which property of a number fails a real number to provide, in your opinion?

> While Wolfram gave such exotic knowledge like centillion, I didn't find
> much about the very properties of a number in general. A number is
> merely said to be a member of a set.

Could you please show the reference of this silly definition?

> If I infer correctly, infinity
> cannot be such a general number while I would tend to ascribe it to the
> continuum c alias real numbers.

I know that you tend to many bizarre ideas. But you are not able to produce anything mathematically consistent (let alone useful) from it. You cannot even _formulate_ it!

> So you can execute the usual cut across
> c between plus infinity and the adjacent minus infinity without any
> protest by number fetishists.

What is "adjacent" supposed to mean here?

> I know: Set theory distinguishes between
> open and closed borders.

It's not set theory that does this.

> However, this is obviously not reasonable in
> case of c.

Sure it is. [0,1] is a different set than (0,1). That you, Eckard Blumschein, have the mathematically unfounded opinion, that {0,1} play no role whatsoever, doesn't change this mathematical fact by the slightest amount. And that's a very good thing.

>>> IR+ has its zero as has IR− too.
>>
>> That's simply wrong. By virtue of their definiton, neither R^+ nor R^−
>> contains the number zero.
>
> Which definition do you refer to?

How many do you know?

R^+ is defined as the set of _positive_ real numbers, where the definition of "positive" is ">0", cf. http://mathworld.wolfram.com/R−Plus.html

Likewise, R^− is defined as the _negative_ real numbers, where the definition of "negative" is "<0", cf. http://mathworld.wolfram.com/R−.html

ciao
Lothar