Re: abundance of irrationals!)

Source: http://sci.tech−archive.net/Archive/sci.math/2005−04/msg02432.html

- *From*: Virgil <ITSnetNOTcom#virgil@xxxxxxxxxxx>
- *Date*: Sat, 16 Apr 2005 14:16:35 −0600

In article <fb701d3c.0504160212.74c81adb@xxxxxxxxxxxxxxxxxx>,
mueckenh@xxxxxxxxxxxxxxxxx (W. Mueckenheim) wrote:

> Virgil − WM
>
>
>
> The large number of contributions is welcome, but forces me to put
> some together.
>
>
> WM:
> Not in that sum which stretches over all n.

No such "sum" exists except as , and only as, the limit of the infinite
sequence of finite partial sums.

If an infinite sequence does not have to "achieve" its limit, no more
does does a sequence of patial sums.
>
> V:
> That "sum" is exactly like that excessively fecund woman who is every
> man's mother, it does not exist.
> Folgetext zu diesem Beitrag schreiben
>
> WM:
> Your example is completely missing the point (as usual), i.e. the SUM
> in a linearly ordered set.

It is indeed the ordering, but not the linearity of ordering, and
"parent of" is an ordering. So Meucken is off the point once more.

> Form the (converging) SUM a_k over k = 1 to n.
> Do this for every finite n, without leaving out any.
> This implies that one of the sums includes all n e N.

It is trivially true that
"For every n in N there is an m in N such that n is in {k: 1 <= k <= m}"

It is trivially false that
"There is an m in N such that for every n in N, n is in {k: 1 <= k <= m}"

The second of these would have to be true to validate Meucken's
falsehoods.
>
> If you disagree, tell me which n is left out.

Of what? Each n, except 1, is left out of the sum of all its
predecessors.

When, and only when, Meucken can prove
"There is an m in N such that for every n in N, n is in {k: 1 <= k <= m}"
will his fantasy world become real.
>
>
> V:
> Nobody is saying that the number yoou create is not a real.
>
> What we are saying is that any number with infinitely many 1s in it
> created from a list in which each number has only finitely many 1s in
> it
> is not in the list. Which shows that your list is not a surjection
> from
> N to R.
>
> WM
> The digits of diagonal and bottom of each finite triangle
>
> 1
> 11
> 111
>
> give the value diagonal / bottom = 1. Should this become false in "the
> infinite". Further, do you see that every 1 of the diagonal stems from
> a line?
>
Do you have a point? Is there any line in your list consisting of
infintiely many 1s? if not your diagonal is not in the list.
>
> There is no need for the limit os a convergent sequence of partial
> sums
> to appear in the sequence itself. So the question is irrelevant.
>
> WM:
> It is exactly the same as with my number 0.111... which does neither
> appear in a line nor on the diagonal.

It appears as the diagonal if it has a 1 in every position to the right
of the radix point.
>

> V:
> If a given list is already known not to be surjective, no more is
> needed.
>
> It is only for lists not initially known not to be surjective that
> anything more is needed.
>
> WM:
> Cantor's assertion does not refer to a particular list but to all
> lists.
> Try to think better.

Try to think at all. The theorem says that no function from N to R can
be a surjection. So if one is given a function known not to be
surjective, what is left to be proved?

Mathematicians have better uses for their time than to prove what is
given.
>
> V:
> But each and every sum_to_n omits infinitely many terms of the
> "infinite" sequence. Since every one omits infinitely many terms, they
> all omit infinitely many terms.
>
> WM:
> Therefore you must include all n > n_0.

In what? The only reasonable conclusion is that every sum omits
infinitely many terms, which is not the same as including all of them.
>
> V:
> Not I.
>
> WM:
> Which one can be left out?

Of what? None is left out of the sequence of partial sums, but each
partial sum has a last term corresponting to an n in N.

> > 0.444...
> > 0.2444...
> > 0.224444...
> > 0.222444...
> > ...
> V:
> Since every number in the list you propose has only finitely many 2s
> as
> place values but has more than any finite number of 4s, then a number
> with no 4s and having more than any finite number of 2s is not in the
> list.

>
> If there are no lines supplying ALL digits of the diagonal (each line
> one digit) then the diagonal cannot exist.

What is that garbage spsed to mean?
If you have 1 line for each n in N and each line supplies 1 digit, then
you have 1 digit for each n in N, which gives me the completed
"diagonal". What part of that "diagonal" does Meucken allege has been
omitted?
>
> V:
> So the Cantor costruction works for that list, as it does for every
> list.
>
> WM:
> By construction, it does not.

None are so blind as those who wWILL not see.
>
> V:
> What do you mean by "the other way around"?
>
> WM:
> First you take an epsilon, then you choose n_0.

That is not "the other way around", that is the straightforward way.
"For every positive epsilon there exists and n_0, such that..."
>
> > But the n do not depend on
> > eps. The inequality must be shown for every n > n_0.

If n_0 dependes on epsilon and you require n > n_0, then the n depend
indirectly on epsilon also. Try thinking before you post.
>
> V:
> And for each n the infinitely many terms beyond n are all omitted.
>
> WM:
> Which is omitted in every case?

Irrelevant.
>
> V:
> In every finite summation (of n terms), infinitely many terms MUST be
> omitted.
>
> WM:
> Which n is omitted n every case?

Irrelevant
>

> V:
> And in every finite summation (of n terms), infinitely many terms MUST
> be omitted.
>
> WM:
> Which n is omitted n every case?

Still irrelevant.
>
> V:
> You are arguing that since every man has a mother that every man must
> have the same mother.
>
> WM:
> Your example is missing the point,

SOMEBODY is missing the point.

For every m in N there is an n in N such that n > m. (TRUE)

versus

there is an n in N such that for every m in N, n > m. (FALSE)

Meucken continually conflates these two thinking that the truth of the
frst requires the truth of the second.

Until he learns that they are not equivalent, he will continue to fail
at any serious mathematical understanding.
i.e. the SUM in a linearly ordered
> set.
> Form the (converging) SUM a_k over k = 1 to n.
> Do this for every finite n, without leaving out any.
> This implies that one of the sums includes all n e N.
>
> If you disagree, tell me which n is left out.

Only when Meucken can tell me why "there is an n in N such that for
every m in N, n > m" must be true, will his questin have any relevance.

>
> V:
> If you must have usefulness, of what use is a baby?
>
> WM:
> Natural numbers enumerate. If you are unable to say which of two comes
> first, you cannot enumerate by them. They are no numbers.

Where in Peano's axioms, or any other mathematical model of naturals is
that requirement stated?

Meucken may think he needs it for his world, but mathematicians do not need it for theirs.
>
>
> V:
> For example, if one knows that the nth term of a series is always in
> [0,
> 1/n^2] then one knows that the sequence of partial sums has a limit,
> though one may be totally unable to "ennumerate" it by finding its
> exact
> value.
>
> WM:
> But the enumeration of the digits is impossible. 0.111... = 1/9 has,
> therefore, not only enumerated digits. But Cantor's lines are
> enumerated.

Meucken's garbage is getting less comprehensible day be day. This chimera of ennumerability in Meucken's world is irrelvant in the mathematical world. Meucken shall not hang his personal hangups on us.
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- ***References***:
  - ***Re: abundance of irrationals!)***
    - *From:* W. Mueckenheim
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    - *From:* Virgil
  - ***Re: abundance of irrationals!)***
    - *From:* W. Mueckenheim

- Prev by Date: ***Re: Differentiating a Log Sum of Gaussians***
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