Re: Cantor Confusion

Source: http://sci.tech−archive.net/Archive/sci.math/2007−03/msg04973.html

- *From*: Virgil <virgil@xxxxxxxxxxx>
- *Date*: Fri, 23 Mar 2007 13:47:48 −0600

In article <1174664147.264581.197260@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
mueckenh@xxxxxxxxxxxxxxxxx wrote:

> On 23 Mrz., 15:58, "Dik T. Winter" <Dik.Win...@xxxxxx> wrote:
>
> > In article <1174654681.038185.299...@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>
> > mueck...@xxxxxxxxxxxxxxxxx writes:
> >
> > How do you obtain that result? You have not shown a proof at all for it.
> >
> > > If we exchange infinitely many terms of the geometric series, its sum
> > > remains 2, because it is absolutely converging.
> > >
> > > As the geometric series contains only the smallest possible infinity
> > > of terms, it should not cause problems to read it from behind.
> >
> > If there were a last one. As there is not a last one I have some
> > difficulty with it, because I do not know where to start.
>
> You need not to start. Reverse all terms of the series simultaneously.

As nodes, like points, are that which has no part, talking of parts of
nodes is nonsense.

> > Yes, I do. What now? Every two paths separate from each other at some
> > specific node, through all nodes go uncountably any paths, there is no
> > level where all paths do separate.
>
> Because there is no "all paths".

There are more things in the imagination, WM, than are drempt of in your

philosophy. Including a set of all endless paths.

> >
> > At no point of the tree (and of the universe) more than countably many
> > path can be distinguished.
>
> I would state that as "at no node in the tree more than countably many
> groups of paths can be distinguished",

That is where we agree.

or, equivalently "at no node in

the tree terminate more than countably many terminating paths".

No path terminates.

They do in finite trees.

This

still does not say anything about the number of non−terminating paths.

That is where we disagree.

The difference being that we have proofs and WM only has assertions.

> I think we have cleared our positions sufficiently: We agree in: At no
> level in the tree more than countably many groups of paths (including
> single paths) can be distinguished. And outside of he tree there are
> no paths.
>
> You nevertheless believe in the uncountable while I do not.

Since there is an easy bijection between the power set of the set of
non−leaf levels of a complete tree and the set of paths of that tree,

If all paths of a binary tree have n edges there are 2^n paths.

If all paths are endless, so that the set of levels has cardinality

aleph_0, then the set of paths has cardinality 2^aleph_0 > aleph_0.
.