Re: Cantor and the binary tree

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- *From*: Tony Orlow (aeo6) <aeo6@xxxxxxxxxxx>
- *Date*: Thu, 26 May 2005 09:59:54 −0400

Virgil said:
> In article <1117021029.341934.48040@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
> mueckenh@xxxxxxxxxxxxxxxxx wrote:
>
> > Virgil wrote:
> > > In article <1116958479.555107.284630@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
> > > mueckenh@xxxxxxxxxxxxxxxxx wrote:
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> > > > > > > > >
> > > > > > > > > > .
> > > > > > > > > > 0 1
> > > > > > > > > > 0 1 0 1
> > > > > > > > > > .....
> > > > > > >
> > > > > > Any path is an infinite sequence of bits which by multiplying with 2^−n
> > > > > > and summing up establishes an infinite series representing a real
> > > > > > number. Every combination of countably many bits is realized by
> > > > > > definition.
> > > > >
> > > > > But such an "infinite" binary tree is not a list, so this has nothing to
> > > > > say about the validity of Cantor's theorem.
> > >
> > > The tree is not a list. Therefore I choose it. Nevertheless it has to
> > > say much about infinite sets and Cantor's theorem, namely that the set
> > > of nodes and the set of paths are equivalent sets.
>
> The set of leaf nodes and the set of finite or terminating paths are
> equivalent, but infinite or non−terminating paths have no leaf nodes,
> so that there is no equivalence.
>
> > The set of nodes is
> > countable and the set of paths is equivalent to the set of reals in
> > (0,1). That's quite a lot of information, isn't it?
>
> GIGO!
>
> WM's "proof" disproved"
>

> WM conflates bounded paths, having terminal or leaf nodes with unbounded
> unending paths which have no terminal or leaf nodes, but contain
> infinitely many intermediate nodes.
>
> 1) Each number of (0,1) is given by an UNENDING path stretching over
> infinitely many nodes (bits).
>
> 2) All nodes (bits) of the tree belong to a countable set.
>
> 3) A node can only exist within a path.
>
> 4) Any node increases the number of