

Re: Cantor and the binary tree

Source: <http://sci.tech-archive.net/Archive/sci.math/2005-05/msg04668.html>

- *From:* mueckenh@xxxxxxxxxxxxxxxxxxxxx
 - *Date:* 25 May 2005 04:37:09 -0700
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Virgil wrote:

> In article <1116958479.555107.284630@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
> mueckenh@xxxxxxxxxxxxxxxxxxxxx wrote:
>
>
>>>
>>>> .
>>>> 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 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?

Regards, WM

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- *Follow-Ups:*
 - ◆ **[Re: Cantor and the binary tree](#)**
 ◇ *From:* Virgil
 - ◆ **[Re: Cantor and the binary tree](#)**
 ◇ *From:* aeo6

- **References:**
 - ◆ **Cantor and the binary tree**
 - ◇ From: mueckenh
 - ◆ **Re: Cantor and the binary tree**
 - ◇ From: Dik T. Winter
 - ◆ **Re: Cantor and the binary tree**
 - ◇ From: mueckenh
 - ◆ **Re: Cantor and the binary tree**
 - ◇ From: Virgil
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