

Re: abundance of irrationals!)

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- *From:* Tony Orlow (aeo6) <aeo6@xxxxxxxxxxxx>
 - *Date:* Tue, 10 May 2005 12:37:22 -0400
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Randy Poe said:

>
> mueck...@xxxxxxxxxxxxxxxxxxxx wrote:
>> Randy Poe wrote:
>>> A number x being in your list means that there is m
>>> such that the m -th number in your list is x .
>>
>> No, these numbers exist in the same way as Cantor's antidiagonal.
>
> Then it's not a list of real numbers.
>
> First, Cantor's antidiagonal exists in the sense of NOT
> being on the list. So you have constructed a list by
> which all real numbers have the property of not being
> on the list?
>
> There is one and only one meaning of "a list of real
> numbers". That is that you have an association between
> every natural number m and every real number a_m on your
> list.
>
> If you respond to this remark with "no", as you did:
>>> A number x being in your list means that there is m
>>> such that the m -th number in your list is x .
>
> then x is not on your list. Because that is the meaning
> of "on a list". There is no other.
>
> If you want to come up with some other construction
> (some sort of infinitely deep binary tree, according
> to comments from others), that's fine. But it's not
> a list, and it doesn't advance your argument that
> a list can contain all real numbers in $(0,1)$.
>
> - Randy
>
>
Excuse me, but the no