

Re: New countable infinity logic

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In <REM-2004nov21-008@Yahoo.Com>, on 11/21/2004
at 01:18 PM, rem642b@Yahoo.Com (tinyurl.com/uh3t) said:

>I can't find the definition online, and am not sure I remember
>"separable", but wouldn't that be something like:

>For rationals and reals in a totally ordered set, reals are separable
>by rationals iff for every two different reals $R < R'$, there is a
>rational r , such that $R < r < R'$.

No. Any dense subset of the reals would have that property. Separable means that there is a countable dense subset.

>For rationals and reals in an abstract topological space,

The elements of an abstract topological space are not, in general, reals.

>reals are separable iff for every two different reals R and R' ,
>there is an open set which contains R but not R' .

No, that's T1. The space is separable if it has a countable dense subspace.

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