

## Re: Cantor's diagonal proof wrong?

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In article <20041120231747.626\$ze@newsreader.com>, curt@kcwc.com (Curt Welch) wrote:

>  
> *If I take the time to master the language and logic of set theory, what I expect to find is that they use a language that makes it trivial to talk about an infinite set as if it existed, and as if it worked exactly like a finite set.*

You need not invest very much time in this study. It's very simple.

Let  $N$  represent the set of Natural numbers, that is, the usual counting numbers one learns about in grade school:  $\{0, 1, 2, 3, 4, 5, 6, \dots\}$

That is an infinite set. It exists. Certainly not in the physical world, but in the world of concepts. It's an idea, the thought of all the counting numbers tossed into a box and considered as a whole.

What do you find difficult to understand about that?

Now when you say that infinite sets "work exactly like" finite sets, that is manifestly false. For example, an infinite set may be in 1-1 correspondence with a proper subset of itself; while a finite set can not. In fact that property is generally taken as the definition of an infinite set.