# Re: Orlow cardinality question

***Source:*** http://sci.tech−archive.net/Archive/sci.math/2005−06/msg02458.html


- *From*: Tony Orlow (aeo6) <aeo6@xxxxxxxxxxx>
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Jan de Vos said:
> In sci.math, Tony Orlow wrote:
> >> But the only "problem" is that it has a property you
> >> don't like. That's a very solipsistic view of "problem".
> > No, it's not a matter of fancy, but of consistency. If a system pretends to
> > measure set sizes, and we agree colloquially that removing an element from a
> > set results in a "smaller" set, but cardinality doesn't reflect this change,
> > then it is not doing the job it claims to be doing. It is not fully
> > distincuishing between sets of different sizes. This is fact, not a matter of
> > opinion.
>
> So your intuition tells you that removing an element from a set makes
> the set smaller. If we think about cardinality as a generalization of
> 'set size', then indeed it does not correspond with your intuition.
>
> However, I have a very different idea about how such a generalization
> should work. Since 'infinity' is not something I recognize as a
> number, a priori, I won't start with thinking about the 'size' of an
> infinite set as a number. However, I do have some idea what it should
> mean that the 'size' of a set A is smaller than the 'size' of another
> infinite set B: if I can embed A in B, but not B in A, then the 'size'
> of B must be bigger than the 'size' of A. If I can embed A in B, and
> B in A (i.e., I can make a bijective map between the two), I don't
> think either of them should be regarded as 'bigger' than the other.
>
> The most important