Re: An uncountable countable set

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- *From*: "Ross A. Finlayson" <raf@xxxxxxxxxxxxxxx>
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Tony Orlow wrote:

> The Inverse Function Rule uses infinite−case induction to finely order infinite sets of reals mapped from a standard set, N. Where there is a bijection between N and a set S using f(n)=s, there is a mapping from S to N using g(s)=n, where g(f(x))=f(g(x)) (inverse functions for the bijection). The size of the set S over the interval [a,b] is given by floor(g(b)−g(a)+1). (I think I wrote that correctly). This works for all finite sets of reals. The number of square roots, for instance, between 1 and 100 is floor(100^2−1^2+1), 10000 square roots, from sqrt(1) to sqrt(10000). IFR can easily be used to show that the evens are half as numerous as the naturals, and other interesting "facts".
>
> EF is the special case of IFR mapping the naturals in [0,oo) to the reals in [0,1), using the mapping function f(n)=n/oo. Isn't that how you define the equivalency function? Given this mapping, we can say g(s)=s*oo, so that over the entire real line, we have oo^2 reals, oo in each unit interval, over oo unit intervals. Does that sound about right?
>
> Tony

Isn't there symmetry about the origin thus it's 2 times oo^2?

Obviously half of the integers are even.

What are cases against use or validity of IFR? How do you address those?

Ross

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