Re: Well Ordering the Reals

Source: http://sci.tech−archive.net/Archive/sci.math/2005−12/msg01486.html

- *From*: "David R Tribble" <david@xxxxxxxxxxx>
- *Date*: 6 Dec 2005 10:40:10 −0800

David R Tribble said:
Tony Orlow wrote:
>> When you say a number like x = 1:1010...1010 has N digits,
>> where N is supposedly infinite, this means that 2x has N+1
>> digits and x^2 has 2N digits, etc. What good is N for, then?
>

Tony Orlow wrote:
> For comparing sets formulaically, when they cannot be directly measured due to
> infinity.

We can define a correspondence between every member of a set A and every member of a set B, for example. This tells us that sets A and B have exactly the same number of members. Notice I didn't mention whether the sets are finite or infinite, because it works for all sets.

You are saying that this is not true, but that you have to compare the sets "formulaically" instead. What if you can't do that? How do you determine the size of the sets then?

Consider the set
Y = {0} u {x+r, where x is in Y and r = random(1,10)}
So Y is a set of random naturals, starting with 0 and increasing to each successor member by a random integer increment r, where 0 < r < 11.

How many members are in Y? I can answer that question (using a simple correspondence wiht N). Can you determine the size of Y formulaically using your "range comparisons"?

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    - ◊ *From:* Tony Orlow

- ***References***:
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        - ◊ *From:* David R Tribble
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        - ◊ *From:* Tony Orlow
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