# Re: Relative Cardinality

***Source:*** http://sci.tech−archive.net/Archive/sci.math/2005−07/msg02472.html


- *From*: "Proginoskes" <proginoskes@xxxxxxxxxxxx>
- *Date*: 16 Jul 2005 21:35:08 −0700


mueckenh@xxxxxxxxxxxxxxxxx wrote:
> Proginoskes wrote:
>
> > > I call 10^10^10^10^10 a number. In fact it is one of the smaller
> > > numbers.
> >
> > You're trying to have your cake and eat it too, here. You want to say
> > that you can make arbitrarily large numbers, but you also want to say
> > that any number that requires more than 10^100 decimal digits isn't
> > really a number.
> >
> No! No! No! There are numbers, perhaps even irrational ones (I have not
> yet figured it out completely) which have never ending n−adic
> expansions. One example is 0.333... . We can determine each digit and
> know all digits simultaneously.

In order to even _talk_ about the notation 0.333..., you need to have
the concept of limits and sums of an arbitrarily large number of
numbers. Since there are only a finite number of Muecken numbers, this
means 0.333... is undefined in your system, so you are not allowed to
use it.

> > Let's define a WM−number to be one that can be expressed by writing
> > digits on each piece of matter in the universe, and that there are M
> > particles of matter in the universe. (We've been saying M is 10^100,
> > but its exact value isn't important.)
>
> The digits need not be written down, if there is a simple rule to
> describe them.

What do you mean by "a simple rule"? Give me a concrete definition.

> > THEOREM. There are only a finite number of WM−numbers.
>
> That is correct. There are at most 10^100 differ