

# Re: Cantor Confusion

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- *From:* Virgil <virgil@xxxxxxxxxxx>
  - *Date:* Tue, 12 Dec 2006 13:06:54 -0700
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In article <457ece72@xxxxxxxxxxxxxxxxxxxxxx>, Tony Orlow <tony@xxxxxxxxxxxxxx> wrote:

Dik T. Winter wrote:

In article <457d8cc0\$1@xxxxxxxxxxxxxxxxxxxxxx> Tony Orlow <tony@xxxxxxxxxxxxxx> writes:

> Dik T. Winter wrote:

>> In article

<1165761763.908889.34550@xxxxxxxxxxxxxxxxxxxxxx>

>> Han.deBruijn@xxxxxxxxxxxxxx writes:

>> ...

>>> Let  $P(a)$  be the probability that an arbitrary natural is divisible

>>> by

>>> a fixed natural  $a$ . Then  $P(a) = 1/a$ . Forbidden by set theory.

>>

>> No. Not specifically forbidden by set theory. Forbidden because there

>> are

>> no appropriate definitions for the words you are using (they are not

>> used

>> conforming to standard definitions, so you better supply definitions).

>> In probability theory (as is commonly use) you have to define how you

>> \*select\* your arbitrary natural. You have not done so, so probability

>> theory does not have an answer.

>

> Why does that matter?

It does matter because if you do not properly define your problem, mathematics is not able to give an answer.

It's sufficiently defined if one assumes that there is a uniform probability distribution.

From which assumption, added to the others, one can deduce that  $0 = 1$ ,

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and all sorts of peculiar things.

- > This is the same thing as your stupid ball and
- > vase trick. Why do you need to label anything, or know what you're
- > choosing from the infinite set?

Because that is part of the problem setting. Giving that setten will allow mathematics to model the question and give an answer.

That problem has a clear answer with or without the labels: the sum diverges as  $f(n)=9n$ . The labels are confounding, not clarifying.

What is confounding to TO is clarifying to