Re: i still haven't get it

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From: Virgil (*ITSnetNOTcom#virgil_at_COMCAST.com*)
Date: 09/27/04

Date: Mon, 27 Sep 2004 15:28:44 −0600

In article <opseznomog3uk9lu@cs81133.pp.htv.fi>,
Keckman <keckman@welho.com> wrote:

> On Sat, 25 Sep 2004 12:47:01 −0600, Virgil
> <ITSnetNOTcom#virgil@COMCAST.com> wrote:
>
> > In article <opsevkwuic3uk9lu@cs81133.pp.htv.fi>,
> > The original issue was "Is there any list of reals from which no reals
> > are misssing?" We have shown that the answer is "No".
>
> I still don't think we have.
>
> If we take "any" list, Cantor's method give us a list of number's that are
> missing from that particular list.
> The method does not give us real number(s) that are missing from any list.

Cantor's Diagonal construction, with minor modifications,gives a method,
valid when appplied to any list, for finding countably many real
numbers not in the list (on the understanding that a "list" is a
function with domain the natural numbers ad codomain the set to be
listed).

> When applyied it gives a list of real numbers. So it will not give us real
> numbers that are missing from "any" list.

It givees numbers which are missing fromany list to which it is
applied, the method itself being independent of the list
>
> If we take one particulary list then too Cantor's method give us a list of
> real number's that are missing from that list.
>
> In either case Cantor's method does not give us real numbers that are
> missing from any list.

The word "any" is ambiguous here. The modified Cantor precedure applied
to one list does not guarantee that the constructed numbers will not be
in some other list, but it guarantees that there will be no list which
is not missing any numbers.

> *We don't know, if some list does contain all real numbers*

But THAT list, as soon as one posits its existence, can be shown to be missing countably many reals.

, and especially
> *we don't no what numbers are missing before we use Cantor's method.*

We don't have to know which ones.

> *We don't know what numbers are missing before we investigate that list.*

But even before we look at the list, we know how to find numbers not in it, since the method applies to every list.

> *If we don't know what numbers are missing, can we still say that we*
> *are sure that some numbers are missing, allthought we exactly don't*
> *know what?*

Yes, because we know how to find some of those missing numbers.

>
> *I think we don't.*

WRONG!

> *You have to prove it. You have to show what numbers are*
> *missing.*

Existence proofs do not require actual instanciation. Cantor proved that such a missing number must exist. He does not actually have to find such a number to show that it exists.

We know that pi has a (theoretically complete) decimal expansion, but no one has ever produced it.
>
> *If we just say, that there is no list containing all real numbers, then*
> *why bother to use Cantor's method to any list?*

Mathematical claims (like the claim that there is no list of all reals) require mathematical proof, at least unless one chooses to take them as axioms. And it is a matter of good mathematical style not to take as an axiom anything provable from other axioms. So the Cantor diagonal proof is valuable because it is possible, though less valuable than Cantor's first proof of the same result.