Re: abundance of irrationals!)

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- *From*: "Dik T. Winter" <Dik.Winter@xxxxxx>
- *Date*: Sat, 7 May 2005 00:32:06 GMT

In article <MPG.1ce541dab6fa9d18989bd5@xxxxxxxxxxxxxxxxxxxxxxxxx> Tony Orlow (aeo6) <aeo6@xxxxxxxxxxx> writes:
> Virgil said:
....
> > Those who, like mathematicians, are used to dealing with axiom systems
> > in their mental world, require actual internal conflicts in those axiom
> > systems before rejecting them.
>
> This is exactly my point. What is "internal"?

If one axiom conflicts with another axiom there is an internal conflict in any axiom system that includes both. That is an internal conflict. Or if the set of axioms can prove something and also the opposite, that is an axiom system with an internal conflict. That is all. If the axiom system does not have an internal conflict it is consistent. That is, every conclusion drawn from the axioms is valid in that system.

> > You can change to any axiom system you like, but you cannot persuade
> > others give up an axiom system except by showing that it is internally
> > inconsistent. Which you have not done.
>
> I have shown that one needs to take into account the nature of the elements
> in one's set, and make sure the conclusions drawn don't violate the rules
> for those elements.

As the rules are axioms, that only means that there is an internal conflict in that situation. That does for instance *not* mean that in bijections you should consider ordering, because bijections are defined in an axiom system that does not have the ordering axioms. Now you can add ordering axioms on the element type, but bijections do not conflict with such axioms, as bijections ignore (by definition) order.

> For instance, a set of strings of length l constructed of
> symbols from a set with size s is known to have a total number of possible
> strings of s^l. So, we know the finiteness of such a set is dependent on the
> finiteness of the length of its strings and vice versa, and so a set of
> strings cannot be said to have an infinite number of distinct finite strings
> constructed from a finite alphabet.

Your conclusion is already wrong. For every finite l the set of strings with
maximal length l is indeed finite. No problem with that. But the set of
all strings of finite length does not have a maximal length for the strings,
hence the conclusion is invalid for that set.

> To have an infinite set of distince
> finite natural numbers is mathematically impossible, and if Cantor disagrees,
> there's a problem there.

Not only Cantor disagrees, Peano also disagrees. And you have still to
show why it is mathematically impossible.

> > This does not assert that there is no such inconsistency,
> > only that neither Orlow nor WM are sufficiently competent to be able to
> > find one.
> >
> These are the points of which Lester speaks, the withdrawal not only into
> specialized fields like physics, psychology or math, but into tiny
> departmentalized sets of axioms or systems, and a focus on a very few
> points at a time.

But that is exactly why mathematics has advanced so much.
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- ***References***:
    - ***Re: abundance of irrationals!)***
        - ◊ *From:* Virgil
    - ***Re: abundance of irrationals!)***
        - ◊ *From:* aeo6

- Prev by Date: ***Re: JSH: Letting it drop***
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