Re: infinity

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- *From*: Tony Orlow (aeo6) <aeo6@xxxxxxxxxxx>
- *Date*: Wed, 7 Sep 2005 15:50:42 −0400

William Hughes said:
>
> aeo6 Tony Orlow wrote:
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> > > > > > William Hughes said:
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> > > > > > > stephen@xxxxxxxxxx wrote:
> > > > > > > > William Hughes <wpihughes@xxxxxxxxxxx> wrote:
> > > > > > > > > Tony Orlow (aeo6) wrote:
> > > > > > > > >> No, it's really not. This problem is couched as an infinity problem. The
> > > > > > > > >> infinite set of natural numbers requires infinite values. Cantorian thought
> > > > > > > > >> purports to talk about infinity, but then limits itself to finite numbers so as
> > > > > > > > >> to avoid the topic. I said IF you limit yourself to finite numbers, THEN you
> > > > > > > > >> could have an empty vase at noon, although this answer still makes no sense
> > > > > > > > >> given the constantly increasing sum. This is one of the reasons NOT to limit
> > > > > > > > >> the naturals to finite values. There is no well−defined size of this set,
> > > > > > > > >> despite the fact that it must be finite, logically.
> > > > > > > >
> > > > > > > > > I assumed, wrongly, that you accepted the existence of the
> > > > > > > > > finite integers. Your contention that "it [the size of this
> > > > > > > > > set] must be finite, logically", is one of your strangest and
> > > > > > > > > silliest. Why can't there be an infinite set of finite things?
> > > > > > > > > Does the fact that we have an infinite number of ping pong
> > > > > > > > > balls mean some of them must be of infinite size?. Yes, assuming
> > > > > > > > > that there are a finite number of finite integers leads to a
> > > > > > > > > contradiction, as there are clearly an infinite number of them.
> > > > > > > >
> > > > > > > > Tony refuses to precisely define what he means by 'infinite'
> > > > > > > > or 'finite'. Apparently the set of finite integers is finite,
> > > > > > > > or perhaps it is undefined. I think Tony's math allows a set
> > > > > > > > to be neither finite or infinite.
> > > > > > > >
> > > > > > > > Clearly the number of finite integers cannot be a finite
> > > > > > > > integer. Let F be the number of finite integers.

> > > > > > > > Tony agrees that if F is a finite integer, then F+1 is
> > > > > > > > a finite integer. That means that the set {1, 2, 3 ..... F, F+1}
> > > > > > > > contains F+1 finite integers, which contradicts the claim
> > > > > > > > that there were F finite integers.
> > > > > > > >
> > > > > > > >
> > > > > > > > This uses the fact that a finite set must have a largest element.
> > > > > > > > TO (at least implicitely) does not accept this. According
> > > > > > > > to TO
> > > > > > > >
> > > > > > > > −the set of finite integers contains a finite
> > > > > > > > number of elements
> > > > > > > >
> > > > > > > > −there is no largest finite integer
> > > > > > > >
> > > > > > > > TO appears bothered by this contradiction, his conclusion is that
> > > > > > > > the set of finite integers doesn't exist!
> > > > > > > >
> > > > > > > > > Perhaps in Tonymatics a set can still be finite even
> > > > > > > > > if the number of the elements in the set is not finite.
> > > > > > > > >
> > > > > > > >
> > > > > > > > Consistency is not TO's strong suit.
> > > > > > > >
> > > > > > > > −William Hughes
> > > > > > > >
> > > > > > > >
> > > > > > The only contradiction arises from your obsession with a last element, and
> > > > > > conflation of it with finiteness for a set. I do not accept that a last element
> > > > > > necessarily indicates a finite set, therefore I see no contradiction between
> > > > > > the set of finite naturals being finite and not having a last element.
> > > > >
> > > > > As stated above I realize you believe that there are only a finite
> > > > > number of finite integers, and there is no largest finite integer.
> > > > > You avoid an explicit contradiction only by refusing to define what
> > > > > you mean by infinite. When I said that "TO appears bothered by this
> > > > > contradiction" I was refering to your statment "There is no
> > > > > well−defined size of this set [the finite integers]
> > > > > despite the fact that it must be finite, logically."
> > > > >
> > > > > −William Hughes
> > > > >
> > > > >
> > > > Why should a poorly defined set size necessarily be infinite? What is the
> > > > contradiction between saying the size is not well defined, although it is known
> > > > to be finite? The number of printed words on Earth is also known to be finite,
> > > > though not a well defined number, and without any upper bound.
> > > >
> > > > When I say a number is infinite, one definition might be to say that counting
> > > > to it, using a constant finite unit of time per iteration, would take forever.
> > > > I am not sure how to defined it to your satisfaction, but I think we all know

> > > > what we are talking about. A finite number is one we could count to, and an
> > > > infinite number is greater than any finite number.
> > >
> > > This is not quite what we need. We need a way to tell if a set has
> > > a finite or infinite number of elements. We might use something like
> > > "if we remove one element using a constant finte unit of time per
> > > iteration,
> > > we will always exhaust a set with a finite number of elements,
> > > but never exhaust a set with an infinite number of elements".
> > > Unfortunately, this leads immediately to the observation that any
> > > set of integers with a finite number of elements has a largest element
> > > (just take any integer from the set, then take the rest one by one,
> > > always keeping the largest found so far. If the set has a finite
> > > number
> > > of elements this process must terminate. When it does you have your
> > > largest element). So with this definition either:
> > >
> > > −there are an infinite number of finite integers
> > >
> > > or
> > >
> > > −there is a largest finite integer
> > >
> > >
> > > > I think we agree that if x
> > > > and y are finite, then x+y, x*y, x^y are all finite.
> > >
> > > The trouble is that "x,y finite implies x+y finite" leads immediately
> > > to the fact that the sum of a finite number of integers is finite.
> > > So:
> > >
> > > Let K be the set of finite integers. Assume K has a finite number of
> > > elements. Let n be the sum of all the elements of K. Then n is a
> > > finite integer. But n is not an element of K. Contradiction.
> > > Therefore K has an infinite number of elements [1]
> > >
> > > −William Hughes
> > >
> > > [1] this specific argument was presented by Daryl McCullough
> > >
> > >
> > Yes, I saw it. It's basically the "largest finite" argument.
>
> No it isn't. The difference is that you claim that:
>
> a: the largest finite natural does not exist
>
> b: the sum of all finite naturals does exist but cannot
> be named.
>
> −William Hughes

>
>
No, I never claimed the sum of all finite naturals "exists". I proved that any set of strings up to a given finite length is finite, and cannot be infinite unless that length is allowed to be infinite. If all strings in your set are finite, then the condition required for the infinite set is not met, and as unbounded as your set may be, it is not infinite.

The concept of summing all finite naturals rests on the concept of finding an end to the set at which to close the summation. So, your argument is a thinly veiled largest−finite argument, no matter how you couch it.
−−
Smiles,

Tony
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    - *From:* William Hughes
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  - ***Re: infinity***
    - *From:* aeo6
  - ***Re: infinity***
    - *From:* William Hughes
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