

Re: Non-zero gaps between real numbers

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- *From:* Randy Poe <poespam-trap@xxxxxxxx>
 - *Date:* Wed, 5 Dec 2007 09:20:16 -0800 (PST)
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On Dec 5, 12:10 pm, LauLuna <laureanol...@xxxxxxxx> wrote:

On Dec 5, 5:41 pm, Randy Poe <poespam-t...@xxxxxxxx> wrote:

On Dec 5, 11:38 am, LauLuna <laureanol...@xxxxxxxx> wrote:

On 30 nov, 11:45, David C. Ullrich
<ullr...@xxxxxxxxxxxxxxxx> wrote:

On Thu, 29 Nov 2007 07:33:59 -0800
(PST), Venkat Reddy

<vred...@xxxxxxxx> wrote:

On Nov 29, 8:17 pm, "Dik
T. Winter"
<Dik.Win...@xxxxxx>
wrote:

In article
<56f03fcc-2b23-41f4-bb98-7eca6016b...@xxxxxxxxxxxxxxxxxxxxxxxx>
Venkat
Reddy
<vred...@xxxxxxxx>
writes:
...
>>
<vred...@xxxxxxxx>
wrote:
>>>The

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definition of
real
numbers
allows one
to find a
real number

>>

>between

any two

given

different

real

numbers. If

one uses

this to

>>>assert

that there is

no

non-zero

extent gap

devoid of

real

numbers in

>>>it, then

I think it is

not a

complete

proof but

just an

assertion.

...

> But then

here is the

counter

argument

with an

equal

amount of

validity

> – since

there are no

two

different

real

numbers

with zero

gap

between

> them,

there is

always a

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non-zero
extent
between
any two real
numbers,
> and hence
real
numbers
can't fill the
real line.

>
According
to you, is
this a
complete
proof?

Apart from
the "hence"
part, that is
also right:
between
any two real
numbers
there is a
non-zero
extent. And
we have
also:
between
any two
real
numbers
there is
another real
number. But
the "hence"
part is
unclear.
What does
it *mean*
that real
numbers fill
or do not
fill
the real

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line?

Lets say that we can accept that the line is "filled" with some kind of pieces, only when the gap between any two adjacent pieces is shown to be zero. There is no reason why we should abandon this reasoning.

Why would we accept that? The line is in fact filled by real numbers, but there's no such thing as two adjacent real numbers.

Why not just say "Let's accept that I'm right about everything"?

However, since there are no adjacent points there is no way to to show that the gap is zero. Since there is no way to prove this, we can't accept that line is filled.

– venkat

David C. Ullrich– Ocultar texto de la cita –

– Mostrar texto de la cita –

Re: Non-zero gaps between real numbers

If the geometric line is made of pieces at all, then it is made of spatially adjacent pieces; this is obvious.

This is the place where you go off the rails.

Stating an (as it turns out, untrue) claim followed by "this is obvious" is not a substitute for logic. What you state is something you are imposing on the continuum, not something which is actually required axiomatically.

– Randy– Hide quoted text –

– Show quoted text –

Think of the spatial continuum as it appears to your spatial intuition, don't replace it by any mathematical construction.

That's what I'm speaking about. And for this, it's absolutely obvious.

If we're doing mathematics, we deal with the mathematical object, not something that "appears to... intuition". That's not something subject to reasoning, only vague hand waving.

– Randy

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