Re: Two results of set geometry

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- *From*: Tony Orlow <tony@xxxxxxxxxxxxx>
- *Date*: Thu, 25 Oct 2007 23:26:47 −0400

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cbrown@xxxxxxxxxxxxxxxxx wrote:

> On Oct 5, 9:26 am, Tony Orlow <t...@xxxxxxxxxxxxx> wrote:
>
>> David R Tribble wrote:
>>
>>> [Yeah, I know there have already been other responses to
>>> this.]
>>> step...@xxxxxxxxxx wrote:
>>>
>>>>> I am saying that a sqaure of
>>>>> finite dimensions is not
>>>>> infinitely tall.
>>>
>>> Tony Orlow wrote:
>>>
>>>> You are being woefully unimaginative.
>>>> Picture a square of infinite
>>>> dimensions [sic], consisting of unit squares
>>>> of uncountable number.
>>>
>>> If it's infinite, it doesn't have any edges, so how do we
>>> know it's an infinite square, and not, say, an infinite
>>> triangle or pentagon? Or circle?
>>
>> Why doesn't it have edges.
>
> For the same reason that there is no last natural number: there is no
> last row or column of squares to make up the edge.

Then there is no omega. I think we can agree on that, given time.

>> Does an infinitesimal square have edges? What
>> is the definition of "square", as opposed to "finite square"?

> There's no difference; that's the problem.

There is. A finite square has a finite measure, equal in one direction to its perpendicular, given particular finite units of measure. Circular? A tad. An infinite square is also equally wide as tall, but infinitely so, meaning there exist segments infinitely distant from each other. That's uncountable, as is the set of p−adics or T−riffics, or H−riffics, for that matter. An infinitesimal square is also equally wide as tall, but smaller than any finite measure. Fluxions are not as outdated as you might think.

> You can't have a square made up of an uncountable number of unit sized squares.

Which axiom forbids this?

You can tile the plane with an infinite number of unit

> squares; and /call/ it an infinite square; but it won't be a square by the usual definition: it won't have four edges, because it won't have edges at all.

It can even be considered the surface of an infinite polyhedron, but do ask if you want to know more about that. I think I'll finally wri

> <snip>
>
> > > But assuming that "zoom infinitely out" has meaning, wouldn't the square (which everyone else would call a "plane") look like a single point when viewed from an infinite distance?
> >
> > No, because it is infinitely wide. If the width is x and you are x distance from it, it will cover only a finite angle from your viewing angle. Why is that different for infinite x?
>
> If you want argue like that: If x is finite, and you view it from an infinite distance, then the angle of view is 0 degrees; making it look like a point.

Correct.

Double x; and it still looks like a point. Keep

> doubling, and it always looks like a point. Why is that different for infinite x?
>
> Cheers − Chas

Thanks, Chas, as always. Sorry I'm just getting back. Your contributions are always welcome.

If we have an uncountable number of points, it may constitute a line, or plane, or whatever−dimensional object, finite or infinite in extent. It may have a finite extent, such that it appears as a point, from an infinite distance. That's true. Furthermore, if it has an actually infinite extent, not parallel to the line of perspective, then it will appear to the viewer to be infinitely wide, or tall, or whatever, if viewed from any finite distance. But, like a finite object viewed from a finite distance, if an infinite object is viewed from a distance that is a finite proportion of that object's size, it will occupy a field of view less than than half the universe, that is, corresponding to the perspective of a finite object, from a finite distance.

Smiles,

Tony

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