Re: Ultimate debunking of Cantor's Theory

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On Jul 11, 11:24 pm, "Peter Webb"
<webbfam...@xxxxxxxxxxxxxxxxxxxxxxxxx> wrote:

> But set theory minus the Axiom of infinity is a perfectly valid set theory.
> The advantage for the poster is that Cantor's diagonal construction of the
> Reals doesn't exist, or indeed any form of the diagonal argument applied to
> infinite sets. ...

I assume that by 'Cantor's diagonal construction' you
mean considering a hypothetical countable list of all of
the decimal expansions of the real numbers between 0 and
1, then going down the diagonal, changing each digit to
any digit other than the one at each diagonal position,
and then noticing that the real number so constructed by
using the changed diagonal elements cannot be in the
original list. Thus the existence of a countable list
of decimal expansions of the reals between 0 and 1 is
disproven.

A variation of that which I subjectively like is making
it a list of binary expansions instead of decimal. Then
it is only necessary to 'flip' the diagonal, changing
all ones to zeros and all zeros to ones.

Are there other noteworthy forms of the diagonal argument?

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