Re: Bringing back an old tetration curiosity?

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- *From*: "I.N. Galidakis" <morpheus@xxxxxxxxxxx>

- *Date*: Sat, 22 Sep 2007 02:20:25 +0300

mike3 wrote:
[snip]

> For example, one should expect x^^(0.49999....) to be exactly
> x^^(0.5)=x^^(1/2).

> And it is, since the function is defined using *real* arguments, not
> "decimal" arguments. It's defined on the set R of real numbers, like
> I said, not on the set D of decimal expansions.

In order to define a function with a *real* argument, you have to tell me what the function *does* to the argument (preferably in terms of Cauchy sequences and limits). I'll make it easier for you: You have to tell me FIRST what the function does to a *rational* argument, like m/n.

I asked you "what does the function do for x^^(2/30)"?, and you agreed to, "let y=m/n be the corresponding value and then evaluate x^^y".

I responded: "This is an ambiguous way to tell me what the function does, because y might not have a unique decimal representation".

If you cannot tell me what the function does to a *rational* argument, you _cannot_ tell me what it does to a (generally) real argument.

Sorry, I am through arguing. You don't see the problem.

[snip]
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I.N. Galidakis

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