

# Re: Contradiction-free mathematics (The new nonstandard analysis)

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  - *Date:* Sun, 29 Jan 2006 19:24:08 -0700
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In article <1138586403.969919.71570@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>, matthias@xxxxxxxxxx wrote:

- > E. E. Escultura
- >
- > > A decimal is known by its digits. Therefore, it exists or is known or
- > > well-defined if every
- > > digit is known or computable. Being computable means there is an algorithm
- > > or rule or
- > > scheme for computing each digit or determining it uniquely from the basic
- > > integers 0, 1, . . . , 9. Since computation is a finite process, the set of
- > > such algorithms is finite.
- >
- > This is clearly false. For each positive integer  $n$  there is a
- > completely explicit, concrete algorithm for producing the decimal
- > expansion of the square root of  $n$ . Thus there are infinitely many
- > "decimals" (which is your word for decimal expansions of real
- > numbers) and infinitely many "such algorithms."
- >
- > Note that this does not depend on classical logic in any way. Both
- > Bishop and Brouwer would agree that the set of algorithms which produce
- > decimal expansions is infinite.

It is even false for the set of natural numbers, as there is an algorithm for each natural and more than any finite number of naturals.

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• *References:*

- ◆ ***Re: Contradiction-free mathematics (The new nonstandard analysis)***  
◇ *From:* Robert J. Kolker
- ◆ ***Re: Contradiction-free mathematics (The new nonstandard analysis)***  
◇ *From:* E. E. Escultura
- ◆ ***Re: Contradiction-free mathematics (The new nonstandard analysis)***  
◇ *From:* matthias

Re: Contradiction-free mathematics (The new nonstandard analysis)

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