

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

Source: <http://sci.tech-archive.net/Archive/sci.math/2006-01/msg04858.html>

- *From:* matthias@xxxxxxxxxxx
 - *Date:* 29 Jan 2006 18:00:04 -0800
-

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.

• *Follow-Ups:*

- ◆ [***Re: Contradiction-free mathematics \(The new nonstandard analysis\)***](#)
◇ *From:* E. E. Escultura
- ◆ [***Re: Contradiction-free mathematics \(The new nonstandard analysis\)***](#)
◇ *From:* Virgil

• *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

- Prev by Date: [***Hexentaquaternions: a two-hand quaternion algebra***](#)
- Next by Date: [***Derivate OFa number***](#)
- Previous by thread: [***Re: Contradiction-free mathematics \(The new nonstandard analysis\)***](#)
- Next by thread: [***Re: Contradiction-free mathematics \(The new nonstandard analysis\)***](#)

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

- Index(es):

- ◆ *Date*

- ◆ *Thread*