

# Re: Hansen chains do not always produce optimum addition chains

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*Source:* <http://sci.tech-archive.net/Archive/sci.math/2005-08/msg00444.html>

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- *From:* Gerry Myerson <[gerry@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:gerry@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* Mon, 01 Aug 2005 16:20:27 +1000
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In article <42edacbd\$1@xxxxxxxxxxxxxxxxxxxx>, "Neill Clift [MSFT]" <[neillc@xxxxxxxxxxxx](mailto:neillc@xxxxxxxxxxxx)> wrote:

- > In The Art of Computer Programming, Third Edition, Vol. 2, 4.6.3,
- > Page 485, question 42 is:
- > 'Is  $l(2n-1) \leq n-1+l(n)$  for all positive integers  $n$ ? Does equality
- > always hold? Does  $l(n) = l_0(n)$ '.

You must be using some symbols that don't come through on my machine. The question in Knuth (although I'm looking at 2nd edition) is

'Is  $l(2^n - 1)$  less than or equal to  $n - 1 + l(n)$  for all positive integers  $n$ ? Does equality always hold? Does  $l(n) = l_0(n)$ '

I can't help you with anything, but I wonder whether you have seen the discussion at problem C6 of the 3rd edition of Guy's Unsolved Problems in Number Theory. Guy has a long bibliography.

If you've discovered something that's not in Guy's book, he'd probably appreciate it if you send him whatever you've got written up for inclusion in a 4th edition.

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Gerry Myerson ([gerry@xxxxxxxxxxxxxxxx](mailto:gerry@xxxxxxxxxxxxxxxx)) (i -> u for email)

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- *Follow-Ups:*
    - ◆ ***Re: Hansen chains do not always produce optimum addition chains***  
◇ *From:* Neill Clift [MSFT]
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