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Siebert letter etc

one page

3 segs

S segs
A 5678

1285, 5678
5679
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5681

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To Mr. N.J.A.Sloane
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Dear Mr. Sloane,
it was a pleasure for me to work with your useful handbook.
Let me make some remarks:
Seq. 71 is the so-called Morse symbolic trajectory,or Morse
sequence discovered by Morse (1). It has some interesting fea--
tures: to be free of cubes, i.e. no block A appears three times
consecutively (AAA) in the sequence and, moreover, to be irre-
ducible in the sense of Thue (2).
Now, it turns out to be possible to construct unending sequen-
ces of three symbols 1,2,3 which are free of squares or, equiva-
lently, irreducible. I think none of them is in the table:

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1,2,1,3,2,1,2,3,1,2,1,3,2,3,1,3,2,1,2,3,1,2,1,3,2,1,2,3,1,3,2,3,
1,2,1,3,2,1,2,3,1,2,1,3,...   (see (3),p.14)

$\gamma = $
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1,2,3,1,3,2,1,2,3,2,1,3,1,2,3,1,3,2,1,3,1,2,3,2,... (see (4), p.5)

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1,2,3,1,2,1,3,2,3,1,3,2,1,2,3,1,2,1,3,2,1,2,3,1,3,2,3,1,2,1,3,2,
3,1,3,2,1,2,3,1,3,2,3,1,2,1,3,2,... ,

where the last sequence is to obtain from Seq. 71 by replacing
a 1(resp. a 2) by a 3 iff the predecessor is a 1 (resp. a 2).
There are many other sequences of such a type, but I think the
sequences mentioned above are the most canonically constructible
ones.
For references see p.2.
Finally, let me note that I'd like to receive the supplements
to your book.

                                    Yours

                                    Gert Siebert

(1) Morse, Harold Marston, Recurrent geodesics on a surface of negative curvature, Transactions <u>22</u>(1921), 84-100

(2)Thue, Axel, Über die gegenseitige Lage gleicher Teile gewisser Zeichenketten, Kristiania: Dybwad in Komm. 1912 (Skrifter utg. av Videnskapsselskapet i Kristiania 1. Mat.-nat. Kl. 1912, Nr.1.)

(3)   "   , Über unendliche Zeichenreihen, Kristiania: Dybwad 1906 (same Skrifter, 1906, Nr.7.)

(4) Morse and Hedlund, Unending chess, symbolic dynamics and a problem in semigroups, Duke Math. J. <u>11</u>(1944),1-7