

-- A sequence or real numbers

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Does anyone know, or at least have a clue on the following question ?

Let $(b_n)_n$ be the sequence defined by :

$b_1=1/4$, $b_2=1/16$ and

$b_{n+1}=b_1 b_n+b_2 b_{n-1}+ \dots +b_k b_{n-k+1}+ \dots +b_1 b_n$

Ex: $b_3=b_1 b_2+b_2 b_1=1/32$

$b_4=b_1 b_3+b_2 b_2+b_3 b_1=5/256$ etc.

Finally, let

$X_n=b_n \cdot n^{3/2}$

A computer evaluation hints to the fact that (X_n) is decreasing to a limit approx equal to 1.141...

Proof (?)

Note: the initial values (i.e. b_1, b_2) seems to be essential. Any change, and $(X_n)_n$ appears to behave chaotically. [again, computer says so]

Any information is warmly welcome.

Thanks

cosv

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