

1020-11-247

Mihai Caragiu* (m-caragiu1@onu.edu), Department of Mathematics, Ohio Northern University, Ada, OH 45810. *Recurrent sequences based on the greatest prime factor function.*

We will use the greatest prime factor function (gpf) to generate a class of prime sequences in the following way: $x_1 = p$ (an arbitrary prime) and $x_{n+1} = \text{gpf}(ax_n + b)$ for $n \geq 1$ (a, b are fixed positive integers). Most interesting, it appears that all these ‘linear gpf sequences’ are ultimately periodic. As an example, the sequences corresponding to $a = 2, b = 1$ and p arbitrary appear to enter the period 3,7,5,11,23,47,19,13. Some computer evidence for the ‘GPF conjecture’ will be provided together with a proof of the special case $a|b$. (Received August 29, 2006)