

1096-VO-2240      **Vincent J. Matsko\*** ([vince.matsko@gmail.com](mailto:vince.matsko@gmail.com)), 19 Lambert Dr., Princeton, NJ 08540. *A Collatz-Like Iteration*. Preliminary report.

Consider the following iterative procedure: Begin with an integer written in base 10. If the integer is divisible by 3, then divide by 3; otherwise, reverse the digits and add 1. It is not hard to show that this process either reaches 1 or gets caught in a cycle. A *Mathematica* routine shows that all numbers up to 1,000,000 reach 1 unless they get caught in the cycle  $(14 \rightarrow 42 \rightarrow 14)$ , which happens 90,901 times. Carried out in base 8, this procedure first results in a cycle, of length 7, at 269,573. In base 244, the first cycle encountered is of length 23 and begins with 455,504. Changing the divisor, 3, to another number also raises numerous questions. Interesting features of this procedure are graphically depicted with *Mathematica*. (Received September 17, 2013)