Review of: "Additive and Multiplicative Operations on Set of Polygonal Numbers"

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Potential competing interests: No potential competing interests to declare.

The paper shall not be written in first person. Say ‘’The author’’ or ‘’We’’ in place of ‘’I’’.

I am an engineer, and hence my views will be practically oriented.

I have only one comment: Some applications of the results must be thought of. In cryptography, for example, the generation of a sequence of random numbers will be of interest. For example, linear congruence-based random number generators are well known. Sequence generation using FCSR (feedback with carry shift registers) was based on 2-adic expansion. These have been used in some ciphers (see the books by Bruce Schneier, Applied Cryptography, or William Stallings). As an illustration, if you consider a number 13, we can go on dividing a starting value by 2 and generate a 2-adic sequence of numbers. The LSBs of these numbers will give a good periodic sequence. Example:

Rule: Division by 2 of an odd number modulo p means add p and divide by 2.

Start with 1.

(1+13)/2 = 7,

(7+13)/2 = 10

10/2 = 5

(5+13)/2 = 9

(9+13)/2= 11.

(11+13)/2 = 12

12/2=6

6/2=3,

(3+13)/2 =8

8/2=4

4/2=2

The 12-bit sequence is 110111001000, which is random. Actually, this sequence, read from right, is 315, which is 4095/13

The cryptography problem is if we are given a few bits of the sequence (not the full sequence), can we find what the number with which we started is. Some starting numbers only give a maximum period sequence.

Fibonacci numbers have some applications. Triangular numbers have some applications.

Conclusion: Find some application of your results.