

## A permutation of N in triplets

Hello SeqFans,

S =

1,2,3,4,5,9,6,7,13,8,11,19,10,17,27,12,23,35,14,15,29,16,21,37,18,25,43,...

See S as a succession of triplets [a,b,c]:

S =

1,2,3,  
4,5,9,  
6,7,13,  
8,11,19,  
10,17,27,  
12,23,35,  
14,15,29,  
16,21,37,  
18,25,43,  
...

Rule 1)  $a+b=c$

Rule 2) "a" and "b" share no common factor (except 1)

"b" and "c" share no common factor (except 1)

"c" and "a" share no common factor (except 1)

Rule 3) S is a permutation of the Naturals

To build S is easy:

- write N

- start from the left and:

-> put a "+" on top of two yet unmarked integer which will obey rules (1) and (2) (always start with the smallest unmarked integer)

-> put a "=" on top of the result taking the same rules into account

We have:

N = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24  
25 26 27 28 29 30 31 32 33 34 35 36 ...

+ + =

N = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24  
25 26 27 28 29 30 31 32 33 34 35 36 ...

giving the first triplet [1,2,3]

(used integers will be marked with a dot "." from now on)

. . . + + =

N = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24  
25 26 27 28 29 30 31 32 33 34 35 36 ...

giving the second triplet [4,5,9]

. . . . . + + . =

N = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24  
25 26 27 28 29 30 31 32 33 34 35 36 ...

giving the third triplet [6,7,13]

