

Recamán's sequence

0, 1, 3, 6, 2, 7, 13, 20, 12, 21, 11, 22,
10, 23, 9, 24, 8, 25, 43, 62, 42, 63, 41,
18, 42, 17, 43, 16, 44, 15, 45, 14, 46, ...

$$a(0) = 0;$$

$a(n+1) = a(n)-n$ if positive and not already in,
otherwise $a(n) = a(n-1)+n$.

Nobody knows if every number eventually appears!