Project Euler #225: Tribonacci non-divisors

This problem is a programming version of Problem 225 from projecteuler.net

The sequence 1, 1, 1, 3, 5, 9, 17, 31, 57, 105, 193, 355, 653, 1201 ... is defined by $T_1 = T_2 = T_3 = 1$ and $T_n = T_{n-1} + T_{n-2} + T_{n-3}$.

It can be shown that 27 does not divide any terms of this sequence. In fact, 27 is the first odd number with this property.

Given T_1, T_2 and T_3, find the kth odd number that does not divide any terms of the above sequence.

Input Format

First and only line of each test file contains four integers separated by single spaces: T_1, T_2, T_3 and k.

Constraints

- $1 \leq T_1, T_2, T_3 \leq 30$
- T_1, T_2, T_3 are odd
- $1 \leq k \leq 350$

Output Format

Print exactly one number that is the answer to the problem.

Sample Input 0

```
1 1 1 1
```

Sample Output 0

```
27
```

Sample Input 1

```
1 29 19 131
```

Sample Output 1

```
2019
```

Explanation 1

Happy New Year!