

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 k th 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!