Parity Party

We need your help to divide candies at a very unusual party!
There are n different candies in total. There are three kinds of people at party:

- a of them want to get *odd* number of candies,
- b of them want to get *even* number of candies,
- c simply don't care about parity of candies they get.

Find out the number of ways to divide all of n candies between everybody ($a+b+c$ people), such that everyone is satisfied. Some people may not receive a candy.

Input Format

One line of input contains four space-separated integers n, a, b, c.

Constraints

- $1 \leq n \leq 10^9$,
- $0 \leq a, b, c \leq 50000$,
- $1 \leq a+b+c$.

Output Format

Print one line containing answer to the problem modulo 7340033.

Sample Input 0

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3 1 1 0
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Sample Output 0

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4
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Explanation 0

Let A, B, C be three different candies. One of the visitors wants to get odd number of candies, the other wants to get even number. There are four good splittings:
$(\{A\}, \{B, C\}), (\{B\}, \{C, A\}), (\{C\}, \{A, B\}), (\{A, B, C\}, \emptyset)$.