E. Number Challenge

time limit per test: 3 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

Let's denote $d(n)$ as the number of divisors of a positive integer n. You are given three integers a, b and c. Your task is to calculate the following sum:

Find the sum modulo 1073741824 (2^{30}).

Input

The first line contains three space-separated integers a, b and c $(1 \le a, b, c \le 2000)$.

Output

Print a single integer — the required sum modulo 1073741824 (2^{30}).

Examples

input
2 2 2
output
20

input
4 4 4
output
328

input
10 10 10
output
11536

Note

For the first example.

- $d(1 \cdot 1 \cdot 1) = d(1) = 1$;
- $d(1 \cdot 1 \cdot 2) = d(2) = 2$;
- $d(1 \cdot 2 \cdot 1) = d(2) = 2$;
- $d(1 \cdot 2 \cdot 2) = d(4) = 3$;
- $d(2 \cdot 1 \cdot 1) = d(2) = 2$;
- $d(2 \cdot 1 \cdot 2) = d(4) = 3$;
- $d(2 \cdot 2 \cdot 1) = d(4) = 3$;
- $d(2 \cdot 2 \cdot 2) = d(8) = 4$.

So the result is $1 + 2 + 2 + 3 + 2 + 3 + 3 + 4 = 20$.