B. Algebra

Given three integers n, m, k, find the number of pairs (a, b) where

- $|a|, |b| \leq m$,
- $a, b \in \mathbb{Z}$, i.e., a and b are integers,
- $|S| = k$ where S be the set of rational roots of the equation $x^n + a \cdot x + b = 0$, and $|S|$ is the size of S. In particular, there exists exactly k **distinct rational** numbers x which solve the last equation.

Note: x is a rational number if and only if there exists two integers p and q ($q \neq 0$) where $x = \frac{p}{q}$.

Input

The input consists of several test cases terminated by end-of-file. For each test case,

The first line contains three integers n, m and k.

- $1 \leq n, m, k \leq 5 \times 10^5$
- In each input, the sum of m does not exceed 5×10^5.

Output

For each test case, output an integer which denotes the number of pairs.

Sample Input

```
2 1 1
2 2 2
3 3 3
```

Sample Output

```
1
7
1
```

Note

For the first test case, only the equation $x^2 = 0$ has one rational root.

For the second test case, each of the following 7 equations has two distinct rational roots.

- $x^2 - 2x = 0$
- $x^2 - x = 0$
- $x^2 - x - 2 = 0$
- $x^2 - 1 = 0$
- $x^2 + x = 0$
- $x^2 + 2x = 0$
- $x^2 + x - 2 = 0$