Problem C. Ball Correction

TimeLimit: 1 second
MemoryLimit: 256 megabytes

There is a row of n boxes numbered from 1 to n. Inside the boxes, there are two balls labeled A and B. A girl named Yue moves these balls. At time 0, Ball A is at box x facing left, and Ball B is at box y facing right. We know that $x < y$, so the balls start back-to-back and move away from each other.

Every second, Yue moves each ball one step in its current direction. If the next step would result in any of the following situations, she performs the corresponding correction:

- If a ball is about to hit the wall (ball A is at box 1 facing left, or ball B is at box n facing right), Yue does a **Boundary Correction**. To do this, she turns that ball around and immediately moves it one step in the new direction.
- If the balls are about to hit (the next box of A is equal to the next box of B) or pass (the next box of A is greater than the next box of B) each other, Yue does a **Special Correction**. To do this, she turns both balls around at the same time and immediately moves them one step in the new directions.
- If no problem happens, Yue just moves both balls one step forward.

Your task is to count how many times Yue does a **Special Correction** in t seconds.

For example, consider the case with $n = 6$, $x = 2$, $y = 5$, and $t = 7$. At time 0, Ball A is at box 2 facing left, and Ball B is at box 5 facing right.

- At time 1, Ball A moves to box 1 and Ball B moves to box 6.
- At time 2, both balls are about to hit the walls, so Yue performs **Boundary Corrections** on both balls. Ball A turns around and moves to box 2, and Ball B turns around and moves to box 5.
- At time 3, Ball A moves to box 3 and Ball B moves to box 4.
- At time 4, the balls are about to pass each other, so Yue performs a **Special Correction**. Both balls turn around and move one step in the directions they are now facing: Ball A goes back to box 2, and Ball B goes back to box 5.
- The process continues in the same way until time 7.

During these 7 seconds, Yue performs the **Special Correction** exactly once.

Input

The input consists of a single line containing four integers n, x, y, t. These represent the total number of boxes, the initial position of Ball A, the initial position of Ball B, and the total time, respectively.

The input constraints are as follows:

- $4 \leq n \leq 10^9$
- $1 \leq t \leq 10^{16}$
- $2 \leq x < y \leq n - 1$

Output

Output a single integer representing the total number of **Special Corrections**.

Examples

standard input	standard output
6 2 5 7	1
10 3 5 30	4
998244353 2 998244351 123456789101112	123674
654323 3 6 74928914995	114514