

ELEVATOR II

[English](#)

[Vietnamese](#)

Edward works as an engineer for Non-trivial Elevators: Engineering, Research and Construction (NEERC). His new task is to design a brand new elevator for a skyscraper with h floors. Edward has an idée fixe: he thinks that four buttons are enough to control the movement of the elevator. His last proposal suggests the following four buttons:

- Move a floors up.
- Move b floors up.
- Move c floors up.
- Return to the first floor.

Initially, the elevator is on the first floor. A passenger uses the first three buttons to reach the floor she needs. If a passenger tries to move a , b or c floors up and there is no such floor (she attempts to move higher than the h -th floor), the elevator doesn't move. To prove his plan worthy, Edward wants to know how many floors are actually accessible from the first floor via his elevator. Help him calculate this number.

Input

The first line of the input file contains one integer h — the height of the skyscraper ($1 \leq h \leq 10^{18}$). The second line contains three integers a , b and c — the parameters of the buttons ($1 \leq a, b, c \leq 100000$)

Output

Output one integer number — the number of floors that are reachable from the first floor.

Example

Input 1:

```
15  
4 7 9
```

Output 1:

```
9
```

Input 2:

```
500000  
160 96 111
```

Output 2:

```
498167
```

Input 3:

```
987654321987654321  
99995 99997 99999
```

Output 3:

```
987654319487854318
```