Bloomberg CODECON

Memory Limit: 1024 MB
Time Limit: 5 s

Chocolate Fix (100 points)

Introduction

A shop sells chocolates at a specified price per chocolate.

Each chocolate comes in 1 wrapper. You can exchange a specified number of wrappers for 1 new chocolate.

Tintimon wants to help his friends calculate how many chocolates each of them can get given how much money each has to spend on chocolates.

Wrappers cannot be transferred from one friend to another.

Help him write a program to calculate how many chocolates his friends can get.

Input Specifications

- The first line contains N, the price per chocolate in dollars ($0 < N < 1000$)
- The second line contains M, the number of wrappers that can be exchanged for a new chocolate ($N < M < 1001$)
- The third line contains P, where P is the total number of friends ($0 < P < 1000$)
- Then follows P lines of input, each containing Q, where Q is the amount of money that the friend has to spend on chocolates ($0 < Q < 1{,}000{,}000$)

Output Specifications

Based on the input, print out on **P** lines, the **number of chocolates** each friend can get. The ordering here should follow the order seen in the input.

Sample Input/Output

Input

```
1
2
1
1
```

Output

```
1
```

Explanation

Each chocolate costs $1. You can buy 1 chocolate with $1, which gives you 1 wrapper. You can exchange 2 wrappers for a new chocolate, but since you only have 1 wrapper, you cannot make an exchange. Hence, you can get 1 chocolate.

Input

1
3
2
45
15

Output

67
22

Explanation

Each chocolate costs $1. Friend 1 has $45. She can buy 45 chocolates, which will give her 45 wrappers. She can continue to exchange 3 wrappers for a new chocolate. She continues to exchange wrappers for chocolates until she gets 67 chocolates. Friend 2 does the same, starting with $15, and can get 22 chocolates.