

Function

You are given and integer M, and 3M integers, $a_1, a_2, ..., a_M, b_1, b_2, ..., b_M$, and $N_1, N_2, ..., N_M$. For each a_i, b_i, N_i where i is integer from 1 to M, you have to output the minimum integer X such that $a_iX^3 + b_iX >= N_i$.

Format Input

The first line consist of an integer M. The second line consist of M integers, $a_1, a_2, ..., a_M$. The third line consist of M integers, $b_1, b_2, ..., b_M$. The fourth line consist of M integers, $N_1, N_2, ..., N_M$.

Format Output

Output M lines. The i-th line consist of an integer which is the minimum integer X such that $a_iX^3 + b_iX >= N_i$.

Constraints

- $1 \le M \le 10^5$
- $1 \le a_i \le 5$
- $1 \le b_i \le 10^{12}$
- $1 < N_i < 10^{15}$

BINUS

Sample Input 1 (standard input)

2 1 2 10 5 398 123

Sample Output 1 (standard output)

7 4

[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probihited. For those who violated this disclaimer, academic sanctioned can be enforced.



Function

Anda diberi sebuah bilangan bulat M, dan 3M bilangan bulat, $a_1, a_2, ..., a_M, b_1, b_2, ..., b_M$, dan $N_1, N_2, ..., N_M$. Untuk setiap a_i, b_i, N_i di mana i adalah bilangan bulat dari 1 sampai M, anda harus mengoutputkan bilangan bulat minimum X yang memenuhi $a_iX^3 + b_iX >= N_i$.

Format Input

Baris pertama terdiri dari sebuah bilangan bulat M. Baris kedua terdiri dari M bilangan bulat, $a_1, a_2, ..., a_M$. Baris ketiga terdiri dari M bilangan bulat, $b_1, b_2, ..., b_M$. Baris keempat terdiri dari M bilangan bulat, $N_1, N_2, ..., N_M$.

Format Output

Outputkan M baris. Baris ke-i terdiri dari sebuah bilangan bulat yang merupakan bilangan bulat minimum X yang memenuhi $a_iX^3 + b_iX >= N_i$.

Constraints

- $1 \le M \le 10^5$
- $1 \le a_i \le 5$
- $1 \le b_i \le 10^{12}$
- $1 < N_i < 10^{15}$

BINUS

Sample Input 1 (standard input)

Sample Output 1 (standard output)

7 4

[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probibited. For those who violated this disclaimer, academic sanctioned can be enforced.