Game Saloon

Time Limit: 1.0s   **Memory Limit:** 256M

A smart woman named BOB owns the only gaming saloon in ROSELAND. Customers have gaming-cards in which they store their gaming credits that they have bought prior to playing a game. To play, one must insert their gaming-card to the game machine, and their account is billed instantly at the end of every minute. If the card balance becomes non-positive, the game automatically turns off and the gaming-card is spit out. BOB's saloon has two different pricing plans, the member-only plan and the one-time-visitor plan. The one-time-visitor plan is straight forward, it has a fixed price of p_1 credits per minute. The member-only plan, on the other hand, is privileged, and it functions as follows: the first t_1 minutes are priced at c_1 credits per minute. The next t_2 minutes cost c_2 credits each. And all the following game time costs c_3 credits per minute.

VANILLA has N credits on his account. He wants to play for K minutes and calculate how many credits will be left in his account after that time. If his credits are not enough to play for K minutes, he will want to know how many minutes he can play. If his account balance can't afford even 1 minute of gameplay, the game won't start.

Input:

The first line of the input is a character specifiying whether VANILLA is a member or a visitor. "M" shows that his plan is member-only plan and "V" shows that his plan is one-time-visitor plan. The next line **either contains 7 integers (the member-only case)** $N, K, t_1, t_2, c_1, c_2, c_3$ **OR it contains 3 integers (the one-time-visitor case)** N, K, p_1.

Output:

Print out just one integer, how many credits will be left after playing the game. In the case of insufficent funds print how many minutes can be played.

Samples:

Input

```
V
100 50 3
```

Output

```
33
```

Input

```
M
100 10 1 3 1 5 7
```

Output

```
42
```

Notes

- In the first example VANILLA wants to play 50 minutes but he can only play for 33 minutes.
- In the second example VANILLA can play for 10 minutes and he is left with 42 credits.