C. Hamburgers

time limit per test: 1 second
memory limit per test: 256 megabytes

Polycarpus loves hamburgers very much. He especially adores the hamburgers he makes with his own hands. Polycarpus thinks that there are only three decent ingredients to make hamburgers from: a bread, sausage and cheese. He writes down the recipe of his favorite "Le Hamburger de Polycarpus" as a string of letters 'B' (bread), 'S' (sausage) и 'C' (cheese). The ingredients in the recipe go from bottom to top, for example, recipe "BSCBS" represents the hamburger where the ingredients go from bottom to top as bread, sausage, cheese, bread and sausage again.

Polycarpus has n_b pieces of bread, n_s pieces of sausage and n_c pieces of cheese in the kitchen. Besides, the shop nearby has all three ingredients, the prices are p_b rubles for a piece of bread, p_s for a piece of sausage and p_c for a piece of cheese.

Polycarpus has r rubles and he is ready to shop on them. What maximum number of hamburgers can he cook? You can assume that Polycarpus cannot break or slice any of the pieces of bread, sausage or cheese. Besides, the shop has an unlimited number of pieces of each ingredient.

Input

The first line of the input contains a non-empty string that describes the recipe of "Le Hamburger de Polycarpus". The length of the string doesn't exceed 100, the string contains only letters 'B' (uppercase English B), 'S' (uppercase English S) and 'C' (uppercase English C).

The second line contains three integers n_b, n_s, n_c $(1 \le n_b, n_s, n_c \le 100)$ — the number of the pieces of bread, sausage and cheese on Polycarpus' kitchen. The third line contains three integers p_b, p_s, p_c $(1 \le p_b, p_s, p_c \le 100)$ — the price of one piece of bread, sausage and cheese in the shop. Finally, the fourth line contains integer r $(1 \le r \le 10^{12})$ — the number of rubles Polycarpus has.

Please, do not write the %lld specifier to read or write 64-bit integers in C++. It is preferred to use the cin, cout streams or the %I64d specifier.

Output

Print the maximum number of hamburgers Polycarpus can make. If he can't make any hamburger, print 0.

Examples

input Copy

```
BBBSSC
6 4 1
1 2 3
4
```

output Copy

```
2
```

input Copy

```
BBC
1 10 1
1 10 1
21
```

output Copy

```
7
```

input Copy

```
BSC
1 1 1
1 1 3
1000000000000
```

output Copy

```
200000000001
```

Codeforces Round 218 (Div. 2)
Finished
Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
179824282	Nov/07/2022 00:17	Accepted
179824258	Nov/07/2022 00:17	Wrong answer on test 6

→ Problem tags

binary search brute force *1600

No tag edit access

→ Contest materials

- Announcement
- Tutorial