Scrabble

Ana is playing Scrabble, and she has the first turn. She can place any word that is in the dictionary in the board. Knowing the 7 tiles (letters) that Ana has and the list of the words in the dictionary, which is the maximum amount of points that she can obtain? The number of points earned is equal to the length of the word, unless the word **has more** than three characters, in that case the amount of points will be doubled.

Ana has to make a word using some of the 7 letters that she has and she can not use the same letter more than once times unless she has it repeated as many times as she uses it, for example, if she has a tile with letter A and another tile with letter N, she can not make the word ANA unless she has a second tile with the letter A.

Input and output

The input consists in:

- A line with an integer n, the length of the dictionary.

- n lines, each with a word S_i from the dictionary.

- A line with 7 charcters c_j separated by spaces, the 7 letters that Ana has.

The output must be a line with the integer p, the greatest amount of points that Ana can earn (0 in case she can not make any word from the dictionary).

Samples

Sample 1

Input:

```
4
ANA
MARIA
MIGUEL
MARCO
M M R I E A A
```

Output:

```
10
```

The longest word that can be made is `MARIA`, which obtains $2 \cdot 5 = 10$ points.

Sample 2

Input:

```
3
ANA
OCA
XYZ
E R T Y U A N
```

Output:

```
0
```

Sample 3

Input:

```
2
RETO
POL
G H P L I O R
```

Output:

```
3
```

Sample 4

Input:

```
1
ANA
A K J N B E W
```

Output:

```
0
```

Sample 5

Input:

```
1
BEA
Y B A U J E Z
```

Output:

```
3
```

Constraints

- $1 \leq n \leq 20$
- $1 \leq |S_i| \leq 7$
- All the letters in the dictionary words and in c_j are uppercase English characters.

Subtasks

1. (20 points) The longest word in the dictionary will have at most three characters.

2. (38 points) Ana will not have repeated letters (but the dictionary can have words with repeated letters).

3. (26 points) There will not be words in the dictionary with repeated letters (but Ana can have repeated letters).

4. (16 points) No additional constraints.