24 **Word search control**
15 points

Introduction

You are responsible for creating word searches, and you would like to know the proportion of letters that form part of words compared to the total number of characters in the grid. Be careful, a word can share a letter with other words, so avoid counting them twice.

Words can appear multiple times, from left to right, from right to left, from top to bottom, from bottom to top and in any diagonal direction.

Input

The input is structured as follows:

- First line: a list of the words to search.

- Second line: the number of rows.

- As many strings as the number of rows, representing the text where the words have to be found.

Output

The output must be the percentage of the characters of the grid forming the input words with respect to the total amount of characters in the grid, to exactly 2 decimal places.

Example 1

Input

```
SOL MARIA DAVID LAURA DANI
6
RMLAURA
XYOOVDU
DISRSIQ
AOTDIVD
NVHFHAX
IIANYDT
```

Output

```
The words given occupy 42.86% of the grid.
```

Example 2

Input

```
COW DEER HEN DOG HORSE PIG
7
NDOYEKNO
ZNWOCWRD
ZEDEAEOG
HENEENOD
WRUDKAOG
ZOOETGLI
MHORSESP
```

Output

```
The words given occupy 37.50% of the grid.
```