

# Problem D

## Date Picker

Time limit: 1 second

The NWERC is coming up and your agenda is filling up with meetings. One of your teammates wants to plan a meeting, and asks for your input. However, instead of asking you for your exact agenda, you have to fill out two separate polls: one for indicating which days you are available, and one for the hours!



A filled agenda.

As a computer scientist, you plan your meetings only on whole hours and each meeting takes an integer number of hours. Therefore, your agenda can be modelled as a matrix of 7 rows (days), and 24 columns (hours). Each cell in this matrix is either '.' or 'x', meaning that hour of that day you are either free or have a meeting, respectively.

You have to pick at least  $d$  days in the first poll and  $h$  hours in the second poll, and we assume the meeting will take place on any of your picked hour/day combinations with equal probability. What is the probability that you can attend the meeting if you fill in the polls optimally?

### Input

The input consists of:

- 7 lines with 24 characters, each character being either '.' or 'x', with '.' indicating the time slots you are available.
- One line with two integers  $d$  and  $h$  ( $1 \leq d \leq 7$ ,  $1 \leq h \leq 24$ ), the minimum number of days and hours you have to fill in.

### Output

Output the probability that you are available at the chosen meeting time.

Your answer should have an absolute or relative error of at most  $10^{-6}$ .

#### Sample Input 1

```
xxxxxx..xx..xxxxxxxxxxxxxx
xxxxxxxxxxxxxxxx.....xxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxx..xx..xxxxxxxxxxxxxx
xxxxxxxxxxxxxxxx.....x..xxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
2 5
```

#### Sample Output 1

```
0.8
```

**Sample Input 2**

```
xxxxxxxxxx.....x.....xxxxxxxx
xxxxxxxxx..x...x...xxxxxxxx
xxxxxxxxx.....x...x.xxxx
xxxxxxxxx...xxxxxxxxxxxxxxxx
xxxxxxxxx...xxxxxxxxxxxxxxxx
xxxxxxxxx...xxxxxxxxxxx.xxxx
.....xxxxxxxxxxxxxxxxxxxxxx
3 8
```

**Sample Output 2**

```
0.9583333333333333
```