

TASK	INSTRUKCIJE	PJESMA	LAGNO	NIKOLA
input	standard input			
output	standard output			
time limit (per test case)	1 second			
memory limit (heap+stack)	32 MB			
points	30	45	55	70
	200			

Little Marica started elementary school this year. Soon she will have her first exams, including the math exam. She is taking it seriously and thinks she is ready. Her older brother is helping her by giving her problems to solve.

In one of his problems he writes down a sequence of numbers consisting in order of one number 1, two numbers 2, three numbers 3 etc. Now he tells Marica two integers A and B; her task is to find the sum of integers with indices between A and B, inclusive. For example, if A is 1 and B is 3, then the answer is the sum of the first three elements, which is $1+2+2=5$.

Write a program that finds the sum so that Marica's brother can verify her result.

Input

The first and only line contains the positive integers A and B, $1 \leq A \leq B \leq 1000$.

Output

Output the sum on a single line.

Example test data

input	input	input
1 3	3 7	50 50
output	output	output
5	15	10

"Guess the song" is a popular game among young programmers in Croatia. It is a game of skill, wisdom and patience. The game host plays a song so that all players hear it. The players' goal is to guess the title of the song as fast as possible.

Mirko may not be much of a programmer, but he is a world class song-guesser. Mirko always guesses the song at the moment when **at least half** of the words in the title of the song have been said in the lyrics. All words in the song title are unique (no word will occur two or more times).

Write a program that, given the song title and its lyrics, determines at which point during the song (after how many words) Mirko guesses the title.

Input

The first line contains an integer N , $1 \leq N \leq 50$, the number of words in the song title.

Each of the following N lines contains one word in the song title.

The next line contains an integer M , $1 \leq M \leq 10\,000$, the number of words in the lyrics.

Each of the following M lines contains one word of the lyrics.

All words in the title and lyrics will consist of between 1 and 15 lowercase English letters.

Note: the test data will be such that Mirko will always guess the song title from the lyrics.

Output

Output the number of words in the song lyrics after which Mirko guesses the title.

Example test data

input

```
3
sedam
gladnih
patuljaka
7
sedam
dana
sedam
noci
sedam
gladnih
godina
```

output

```
6
```

input

```
4
moj
bicikl
mali
crveni
11
ja
vozim
bicikl
crvene
boje
ali
je
moj
moj
samo
moj
```

output

```
8
```

Lagno (also known as Reversi and Othello) is a board game for two players, one black and one white. The board is square, consisting of 8 rows and 8 columns.

In one move, the black player places a black piece into an empty square so that, in at least one of eight directions (up, down, left, right and the four diagonal directions), there is a row of white pieces between the newly placed piece and some other black piece. After placing, **all white pieces between** (in any direction) the **newly placed** black piece and **pre-existing black** pieces become black.

Write a program that, for a given board layout, calculates the largest number of white pieces the black player can convert **in one move**.

Input

The input contains eight lines, each consisting of exactly eight characters '!', 'B' or 'W'. The character '!' represents an empty square, the letter 'B' a square with a black piece, and the letter 'W' a square with a white piece.

Output

Output the largest number of white pieces that black can convert in a single move. If there are no legal moves, output 0.

Example test data

input

```
.....  
.....  
.....  
...BW...  
...WB...  
.....  
.....  
.....
```

output

1

input

```
.....  
.....  
...BB...  
...B...  
..BBW...  
..WWW...  
...WB...  
.....
```

output

2

input

```
...B....  
...W....  
.B.B.B..  
.WWW...  
.BW.WB..  
.....  
.....  
.....
```

output

5

Against his own will, Nikola has become the main character in a game. The game is played on a row of N squares, numbered 1 to N . Nikola is initially in square 1 and can jump to other squares. Nikola's first jump must be to square 2. Each subsequent jump must satisfy two constraints:

- If the jump is in the forward direction, it must be one square longer than the preceding jump.
- If the jump is in the backward direction, it must be exactly the same length as the preceding jump.

For example, after the first jump (when on square 2), Nikola can jump back to square 1 or forwards to square 4.

Every time he enters a square, Nikola must pay an **entry fee**. Nikola's goal is to get from square 1 to square N **as cheaply as possible**. Write a program that determines the smallest total cost for Nikola to get to square N .

Input

The first line contains the integer N , $2 \leq N \leq 1000$, the number of squares.

Each of the following N lines contains the entry fee for one square, a positive integer less than 500. The entry fees will be given in order for squares 1 to N .

Output

Output the smallest total cost for Nikola to get to square N .

Example test data

input	input
6	8
1	2
2	3
3	4
4	3
5	1
6	6
	1
output	4
12	output
	14

In the first example, after jumping to square 2, Nikola jumps back to square 1. From there he can jump to square 3 and then to 6.