

D. White Lines

time limit per test: 1.5 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Gildong has bought a famous painting software *cfpaint*. The working screen of *cfpaint* is square-shaped consisting of n rows and n columns of square cells. The rows are numbered from 1 to n , from top to bottom, and the columns are numbered from 1 to n , from left to right. The position of a cell at row r and column c is represented as (r, c) . There are only two colors for the cells in *cfpaint* — black and white.

There is a tool named *eraser* in *cfpaint*. The eraser has an integer size k ($1 \leq k \leq n$). To use the eraser, Gildong needs to click on a cell (i, j) where $1 \leq i, j \leq n - k + 1$. When a cell (i, j) is clicked, all of the cells (i', j') where $i \leq i' \leq i + k - 1$ and $j \leq j' \leq j + k - 1$ become white. In other words, a square with side equal to k cells and top left corner at (i, j) is colored white.

A *white line* is a row or a column without any black cells.

Gildong has worked with *cfpaint* for some time, so some of the cells (possibly zero or all) are currently black. He wants to know the maximum number of *white lines* after using the eraser **exactly once**. Help Gildong find the answer to his question.

Input

The first line contains two integers n and k ($1 \leq k \leq n \leq 2000$) — the number of rows and columns, and the size of the eraser.

The next n lines contain n characters each without spaces. The j -th character in the i -th line represents the cell at (i, j) . Each character is given as either 'B' representing a black cell, or 'W' representing a white cell.

Output

Print one integer: the maximum number of white lines after using the eraser exactly once.

Examples

input

4 2
BWWW
WBBW
WBBW
WWWB

output

4

input

3 1
BWB
WWB
BWB

output

2

input

5 3
BWBWB
BWBWB
BBBBB
BBBBB
WBWBW

output

Codeforces Round #578 (Div. 2)

Contest is running

01:18:48

Contestant

Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

Score table

	Score
Problem A	436
Problem B	872
Problem C	1090
Problem D	1744
Problem E	1744
Problem F	2180
Successful hack	100
Unsuccessful hack	-50
Unsuccessful submission	-50
Resubmission	-50

* If you solve problem on 00:32 from the first attempt

2

input

Copy

2 2
BW
WB

output

Copy

4

input

Copy

2 1
WW
WW

output

Copy

4

Note

In the first example, Gildong can click the cell $(2, 2)$, then the working screen becomes:

BWWW
 WWWW
 WWWW
 WWWB

Then there are four white lines — the 2-nd and 3-rd row, and the 2-nd and 3-rd column.

In the second example, clicking the cell $(2, 3)$ makes the 2-nd row a white line.

In the third example, both the 2-nd column and 5-th row become white lines by clicking the cell $(3, 2)$.

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