Problem G
Palindromic Word Search
Time limit: 6 seconds

Given a rectangular grid of uppercase letters, find a rectangular region of the grid of maximum possible area such that there is a horizontal palindrome spanning some row of the rectangular region and a vertical palindrome spanning some column of the rectangular region. Recall a palindrome is a string that equals its own reversal.

Sample 1

A	P	P	L	E
B	O	**B**	B	Y
K	**A**	**Y**	**A**	**K**
R	E	**B**	E	L

Sample 2

A	B	**C**	**C**	D	E
P	R	**C**	D	E	E

Sample 3

B	**A**	**N**	**A**	**N**	**A**
B	E	**R**	G	E	N
C	A	**N**	N	O	T
F	E	L	L	O	W

Figure G.1: Illustration of optimal solutions to the sample inputs. In the shaded subregions, a palindrome spanning an entire row of the region and a palindrome spanning an entire column of the region are highlighted.

Input

The first line contains two integers R and C ($1 \leq R, C \leq 500$). Then next R lines describe the grid, each containing exactly C uppercase letters.

Output

Output a single integer A indicating the largest area of a rectangular region of the grid such that there is a horizontal palindrome spanning some row and a vertical palindrome spanning some column of the rectangular region.

Sample Input 1	Sample Output 1
4 5 APPLE BOBBY KAYAK REBEL	15

Sample Input 2	Sample Output 2
2 6 ABCCDE PRCDEE	4

Sample Input 3	Sample Output 3
4 6 BANANA BERGEN CANNOT FELLOW	15