

Grid Paper

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

You have a piece of grid paper. There are n grids in each column and m grids in each row. In the i -th row and j -th column grid, there is an integer $a_{i,j}$ in it. For one piece of grid paper X , define $w(X)$ as the sum of numbers in it.

Now you can get scores by the following rules(your score is equal to zero initially):

Choose one piece of grid paper Y , cut Y through a non-marginal gridline (the line between two adjacent rows or columns and not a border of Y), then Y becomes two smaller pieces of grid paper Y_1, Y_2 . You can get $w(Y_1) \times w(Y_2)$ scores in this operation.

You can do the following operations any number of times(including zero). Try to maximize your score and output that score.

Input

The first line contains two positive integers n and $m(1 \leq n \times m \leq 10^6)$.

For the next n lines: in the i -th line, there are m integers $a_{i,1}, a_{i,2}, \dots, a_{i,m}$. It is guaranteed that $0 \leq a_{i,j} \leq 10^3$.

Output

Output one single integer, denoting the maximum score.

Examples

standard input	standard output
1 2 3 3	9
2 2 0 0 0 1000	0