Problem J. 3D Surface Area

OS Linux

Madison is a little girl who is fond of toys. Her friend Mason works in a toy manufacturing factory . Mason has a 2D board A of size $H \times W$ with H rows and W columns. The board is divided into cells of size 1×1 with each cell indicated by its coordinate (i, j). The cell (i, j) has an integer A_{ij} written on it. To create the toy Mason stacks A_{ij} number of cubes of size $1 \times 1 \times 1$ on the cell (i, j).

Given the description of the board showing the values of A_{ij} and that the price of the toy is equal to the 3d surface area find the price of the toy.

Input Format

The first line contains two space-separated integers H and W the height and the width of the board respectively.

The next H lines contains W space separated integers. The j^{th} integer in i^{th} line denotes A_{ij}.

Constraints

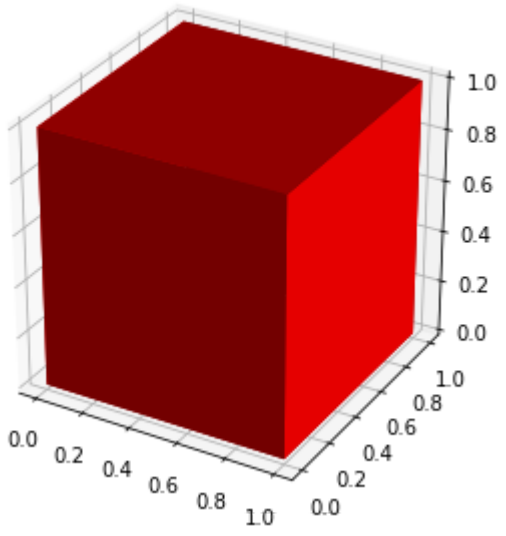
- $1 \leq H, W \leq 100$
- $1 \leq A_{i,j} \leq 100$

Output Format

Print the required answer, i.e the price of the toy, in one line.

Input	Output
1 1 1	6

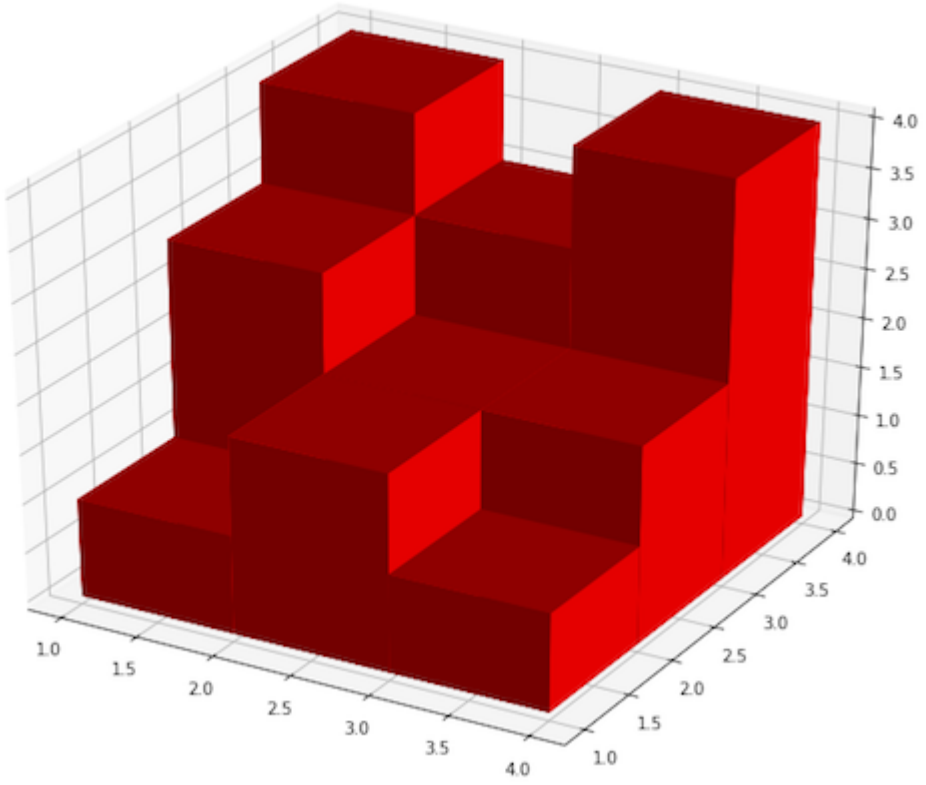
Explanation 0



The surface area of $1 \times 1 \times 1$ cube is 6.

Input	Output
3 3 1 3 4 2 2 3 1 2 4	60

Explanation 1



The object is rotated so the front row matches column 1 of the input, heights 1, 2, and 1.

- The front face is 1 + 2 + 1 = 4 units in area.

- The top is 3 units.
- The sides are 4 units.
- None of the rear faces are exposed.
- The underside is 3 units.

The front row contributes 4 + 3 + 4 + 3 = 14 units to the surface area.