Candy Crush

Description

I guess many of you are family with this game. In this lab, you are to implement an important logic of this game: color crush.

Color crush: there are some colorful candies in the matrix; if a colorful candy is swapped with one of its adjacent (left, right, above, below) candy, all candies that are of the same color as the adjacent candy will be crushed. The colorful candy itself will be crushed as well. If two colorful candies are swapped with each other, all candies in the matrix will be crushed.

1	**1**	**1**	2	**1**	2
4	3	3	2	**1**	3
1	2	2	**-1**	**1**	3
1	**1**	2	3	**1**	3
4	5	5	4	4	2

Input

The first line of the input contains two integers: N and M. N is the number rows, and M is the number of columns of the matrix, 2<N<200, 2<M<200.

Each of the N lines followed contains M integers, where each integer represents a candy in the corresponding grid. There will always at least one and at most ten colorful candies (color -1) in the matrix. All integers are between -1 and 1000, 000, 000.

Output

Output the maximum number of candies that can be crushed directly by swapping a colorful candy with one of its adjacent candies (you do not need to care about the new state after the crushes).

Sample Input

5 6

1 1 1 2 **1** 2

4 3 3 2 **1** 3

1 2 2 -1 **1** 3

1 1 2 3 **1** 3

4 5 5 4 4 2

Sample Output

11