PUT TRINOMO

Given a m * n chess board , Find out minimum no of places to be covered to make it impossible to put a L shaped trinomo on it.

eg. In 2 * 2 chess board if you cover any 2 cells , It will be impossible to put a L shaped trinomo on it

1<=n<=10^8

1<=m<=10^8

A trinomo is a L shaped object.

*

* *

where * represents a cell.

Input

T : no of test cases (T <= 5000)

Next T lines :

every line contain m , n

Output

no of cells to be covered .

Example

Input:
1
2 2
 Output:
2