Abhi and The Monster

Problem code: ABHMNSTR

Once Abhi got a call from his friend Priya. Priya needs some help in solving a Matrix problem as she is trapped by a monster. Abhi has **X** level of intelligence. There is a matrix **M** of size **P*P**, which have all values from **1** to **P^2**. Abhi has to traverse through all the values of the matrix exactly once. He will start his journey from 1, then to P^2, then to 2, then to P^2-1,then to 3 and so on till every value of the matrix covered exactly once. He can move to any of the adjacent cells from a cell(adjacent cells share an edge between them). Moving from a cell to its adjacent cell will reduce intelligence level of Abhi by 1. He can keep moving only when his intelligence level is greater than zero. Abhi has to complete his journey (at the end of the journey X should be greater or equal to zero). If he can complete the journey, Priya will remain alive, otherwise she will eaten by the monster.

Input

The first line of the input contains an integer **T** denoting the number of test cases. The description of **T** test cases follows.
The first line of each test case contains an integer **P** denoting the size of matrix and an integer **X** denoting the intelligence level of Abhi. Each of the next **P** lines contain **P** integers denoting the values in the rows of the matrix.

Output

For each test case, print **"ALIVE"** if Priya will remain alive else print **"DEAD"** if she will be eaten up by the monster.
Output your answer in a single line **without quotes**.

Constraints

- **1 ≤ T ≤ 10**
- **1 ≤ P ≤ 500**
- **0 ≤ X ≤ 10^9**

Example

Input:
2
2 4
1 4
2 3
3 15
2 7 3
4 1 5
9 8 6

Output:
ALIVE
DEAD

Explanation

Example case 2. He will visit the Matrix in following order
(2,2)->(3,1)->(1,1)->(3,2)->(1,3)->(1,2)->(2,1)->(3,3)->(2,3)
His intelligence level will be as follows
{15}->{13}->{11}->{8}->{5}->{4}->{2}->{-1}->{-2} (not possible)
Abhi can not move from number 4 to 6 as he will have insufficient level of intelligence.

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Source Limit:	50000 Bytes
Languages:	ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.9.2, CPP14, CS2, D, ERL, FORT, FS, GO, HASK, ICK, ICON, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYPY, PYTH, PYTH 3.1.2, RUBY, SCALA, SCM chicken, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

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