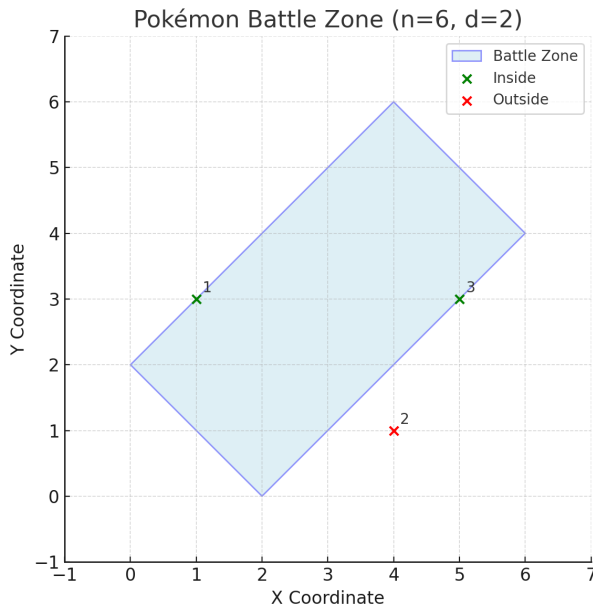


A. Pokémon Battle Zone

time limit per test: 1 s.
memory limit per test: 256 MB

Prokemon League has designated a special battle zone, which can be defined with two integers n and d . The zone is shaped as a rectangle having Cartesian coordinates $(0, d)$, $(d, 0)$, $(n, n - d)$ and $(n - d, n)$.



Wild Prokemons are sighted across the region. The League has recorded m sightings near the battle zone (maybe even inside it). The i -th sighting is at the point (x_i, y_i) . The League wants to know whether each Prokemon is inside the official battle zone (including the border), as only then it qualifies for capture.

Help the League! For each Prokemon, determine if its position is inside the battle zone (including the border) or outside.

Input

The first line contains two integers n and d ($1 \leq d < n \leq 100$).

The second line contains a single integer m ($1 \leq m \leq 100$) — the number of Prokemon sightings.

The i -th of the next m lines contains two integers x_i and y_i ($0 \leq x_i, y_i \leq n$) — the coordinates of the i -th sighting.

Output

Print m lines. The i -th line should contain YES if the Prokemon lies inside or on the border of the battle zone. Otherwise the i -th line should contain NO.

You can print each letter in any case (upper or lower).

Examples

input

6 2

[Copy](#)

UIUC CS 491 Spring 2025

Private

Participant



→ About Group

[Group website](#)

→ Group Contests

- Line Sweep - Homework (Extra Credit)
- Convex Hull - Preclass
- Number Theory I - Homework
- Line Sweep - Preclass
- Number Theory II - Homework
- Combinatorics - Homework
- Geometry - Preclass
- Geometry - Homework
- Convex Hull - Homework (Extra Credit)
- Rabin Karp - Homework
- Number Theory II - Preclass
- Combinatorics - Preclass
- DP TSP - Homework
- KMP - Homework
- DP Tree - Homework
- Number Theory I - Preclass
- KMP - Preclass
- DP Palindromes - Homework
- Rabin Karp - Preclass
- DP Edit Distance - Homework
- DP Knapsack - Homework
- DP TSP - Preclass
- DP Longest Increasing Subsequence - Homework
- DP Intro - Homework
- DP Tree - Preclass
- Greedy - Homework
- Fenwick Tree - Homework

3
1 3
4 1
5 3

output

Copy

YES
NO
YES

The battle zone for this example is defined by the points $(0, 2), (2, 0), (6, 4), (4, 6)$. It is shown above:

A battle zone with $n = 6$ and $d = 2$.

Pokemon with indices 1 (coordinates $(1, 3)$) and 3 (coordinates $(5, 3)$) are **inside** the battle zone.

Pokemon with index 2 (coordinates $(4, 1)$) is **outside**

- DP Knapsack - Preclass
- DP Edit Distance - Preclass
- Segment Tree - Homework
- DP Palindromes - Preclass
- Lazy Segment Tree - Homework
- LCA and Binary Lifting - Homework
- DP intro - Preclass
- Square Root Decomposition - Homework
- DP Longest Increasing Subsequence - Preclass
- Greedy - Preclass
- Fenwick Tree - Preclass
- Bit Manipulation - Homework
- Square Root Decomposition - Preclass
- Fast Exponentiation - Homework
- MST - Homework
- Lazy Segment Tree - Preclass
- LCA and Binary Lifting - Preclass
- Segment Tree - Preclass
- Bit Manipulation - Preclass
- Fast Exponentiation - Preclass
- MST - Preclass
- Graph Traversal 2 - Homework
- Graph Traversal 2 - In Class
- All Pairs Shortest Path - Homework
- All Pairs Shortest Path - In Class
- Single Source Shortest Path - Homework
- Single Source Shortest Path - In Class
- Graph Traversal 1 - Homework
- Graph Traversal 1 - In Class
- Binary Search Tree - Homework
- Binary Search Tree - In Class
- Disjoint Sets - Homework
- Disjoint Sets - In Class
- Divide and Conquer - Homework
- Divide and Conquer - In Class
- Complete Search - Homework
- Complete Search - In Class
- STL - Homework
- STL - In Class
- IO Problems - Preclass
- Test Contest