
Circle Task

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 64 megabytes

Given a cartesian point (X, Y) donates a circle center, a number R donates radius of the circle and a number N donates number of points coordinates. For each point determine whether it belongs to the circle or not.

Input

First line contains four numbers X, Y, R and N ($-10^9 \leq X, Y \leq 10^9, 1 \leq R \leq 10^9, 1 \leq N \leq 100$).

Next N lines will contain one point (x_i, y_i) ($-10^9 \leq x_i, y_i \leq 10^9$).

Output

For each N lines print “**YES**” if the i_{th} point belongs to the circle and “**NO**” otherwise.

Example

standard input	standard output
0 0 4 5	YES
1 3	NO
4 5	YES
4 0	YES
0 0	NO
5 2	