

Time Limit: 1000ms
Memory Limit: 256MB

D - Scientific Study

Submissions Submit

A scientist wants to do a study on students to see how they would choose candy from a set. He has n students and candies. The candies are sorted by deliciousness increasingly. The candies from 1 till k have deliciousness of 1 the candies from $k + 1$ till $2 * k$ have deliciousness of 2, the candies from $2 * k + 1$ till $3 * k$ have deliciousness of 3,..... the candies from $x * k$ till n have deliciousness of x , the last group can have a size less than k .

Students will pick the candy with the highest deliciousness, if multiple candies have the same value then the student can pick any. Starting with the student numbered 1, take turns choosing candy, the i th student can choose candy from the candies that lie in the range $[max(1, i - e), min(n, i + e)]$ each candy can be picked by at most one student.

The scientist needs to know if there exists a way such that each student takes exactly one candy.

Input

The input is made up of 3 integers on a single line $n, e, k(1 \leq n, k \leq 10^9, 0 \leq e \leq 10^9)$, the number of student and candies, the value that defines the range the student can see, and the size of a single group of candies, respectively.

Output

Output "Yes"(without quotes) if there exists a way, otherwise output "No"(without quotes).

Notes

1st test case:

- The first student has to pick the last candy.
- The second student can pick either the first or the second.
- The third can pick whatever is left since he can see the whole array.

2nd test case:

- The first student has to pick the second candy.
- The second student has to pick the first candy.

Samples

Input	Output
3 2 2	Yes
2 1 2	Yes