Problem D. The Cake Is a Lie

Time limit 2000 ms

Mem limit 262144 kB

There is a $n \times m$ grid. You are standing at cell $(1, 1)$ and your goal is to finish at cell (n, m).

You can move to the neighboring cells to the right or down. In other words, suppose you are standing at cell (x, y). You can:

- move right to the cell $(x, y + 1)$ — it costs x burles;
- move down to the cell $(x + 1, y)$ — it costs y burles.

Can you reach cell (n, m) spending **exactly** k burles?

Input

The first line contains the single integer t ($1 \le t \le 100$) — the number of test cases.

The first and only line of each test case contains three integers n, m, and k ($1 \le n, m \le 100$; $0 \le k \le 10^4$) — the sizes of grid and the exact amount of money you need to spend.

Output

For each test case, if you can reach cell (n, m) spending **exactly** k burles, print `YES`. Otherwise, print `NO`.

You may print every letter in any case you want (so, for example, the strings `yEs`, `yes`, `Yes` and `YES` are all recognized as positive answer).

Examples

Input	Output
6 1 1 0 2 2 2 2 2 3 2 2 4 1 4 3 100 100 10000	YES NO YES NO YES NO

Note

In the first test case, you are already in the final cell, so you spend 0 burles.

In the second, third and fourth test cases, there are two paths from $(1, 1)$ to $(2, 2)$: $(1, 1) \rightarrow (1, 2) \rightarrow (2, 2)$ or $(1, 1) \rightarrow (2, 1) \rightarrow (2, 2)$. Both costs $1 + 2 = 3$ burles, so it's the only amount of money you can spend.

In the fifth test case, there is the only way from $(1, 1)$ to $(1, 4)$ and it costs $1 + 1 + 1 = 3$ burles.