

B. Block Adventure

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Gildong is playing a video game called *Block Adventure*. In Block Adventure, there are n columns of blocks in a row, and the columns are numbered from 1 to n . All blocks have equal heights. The height of the i -th column is represented as h_i , which is the number of blocks stacked in the i -th column.

Gildong plays the game as a character that can stand only on the top of the columns. At the beginning, the character is standing on the top of the 1-st column. The goal of the game is to move the character to the top of the n -th column.

The character also has a bag that can hold infinitely many blocks. When the character is on the top of the i -th column, Gildong can take one of the following three actions as many times as he wants:

- if there is at least one block on the column, remove one block from the top of the i -th column and put it in the bag;
- if there is at least one block in the bag, take one block out of the bag and place it on the top of the i -th column;
- if $i < n$ and $|h_i - h_{i+1}| \leq k$, move the character to the top of the $i + 1$ -st column. k is a non-negative integer given at the beginning of the game. Note that it is only possible to move to the **next** column.

In actions of the first two types the character remains in the i -th column, and the value h_i changes.

The character initially has m blocks in the bag. Gildong wants to know if it is possible to win the game. Help Gildong find the answer to his question.

Input

Each test contains one or more test cases. The first line contains the number of test cases t ($1 \leq t \leq 1000$). Description of the test cases follows.

The first line of each test case contains three integers n , m , and k ($1 \leq n \leq 100$, $0 \leq m \leq 10^6$, $0 \leq k \leq 10^6$) — the number of columns in the game, the number of blocks in the character's bag at the beginning, and the non-negative integer k described in the statement.

The second line of each test case contains n integers. The i -th integer is h_i ($0 \leq h_i \leq 10^6$), the initial height of the i -th column.

Output

For each test case, print "YES" if it is possible to win the game. Otherwise, print "NO".

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

Example

inputCopy

```
5
3 0 1
4 3 5
3 1 2
1 4 7
4 10 0
10 20 10 20
2 5 5
0 11
1 9 9
99
```

Codeforces Round #578 (Div. 2)

Contest is running

01:40:54

Contestant

Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

Last submissions

Submission	Time	Verdict
58584281	Aug/11/2019 15:53	Running on pretest 7

Score table

	Score
Problem A	462
Problem B	924
Problem C	1155
Problem D	1848
Problem E	1848
Problem F	2310
Successful hack	100
Unsuccessful hack	-50
Unsuccessful submission	-50
Resubmission	-50

* If you solve problem on 00:19 from the first attempt

output

Copy

YES
NO
YES
NO
YES

Note

In the first case, Gildong can take one block from the 1-st column, move to the 2-nd column, put the block on the 2-nd column, then move to the 3-rd column.

In the second case, Gildong has to put the block in his bag on the 1-st column to get to the 2-nd column. But it is impossible to get to the 3-rd column because $|h_2 - h_3| = 3 > k$ and there is no way to decrease the gap.

In the fifth case, the character is already on the n -th column from the start so the game is won instantly.

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