

Lexicographic paths



Krishnakant is standing at $(0,0)$ in the [Cartesian plane](#). He wants to go to the point (x,y) in the same plane using only horizontal and vertical moves of 1 unit. There are many ways of doing this, and he is writing down all such ways. Each way comprises of few **H** moves and few **V** moves. i.e. moves in horizontal and vertical direction respectively. For example, if Krishnakant wants to go to point $(2,2)$ from point $(0,0)$, **HVHV** is one of the possible ways.

Given the value of K , he wants to know lexicographically K^{th} smallest way of going to (x,y) from $(0,0)$.

Input Format

The first line contains an integer T , i.e., number of test cases.

Next T lines will contain integers x,y and K .

Output Format

For each test case, print lexicographically K^{th} smallest path.

Constraints

$$1 \leq T \leq 100000$$

$$1 \leq x \leq 10$$

$$1 \leq y \leq 10$$

$$0 \leq K < \text{number of paths}$$

Sample Input

```
2
2 2 2
2 2 3
```

Sample Output

```
HVVH
VHHV
```

Explanation

All the paths of going to $(2,2)$ from $(0,0)$ in lexicographically increasing order:

- 0.**HHVV**
- 1.**HVHV**
- 2.**HVVH**
- 3.**VHHV**
- 4.**VHVH**
- 5.**VVHH**