# Problem B. Big Kingdom

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|---|---|
| Input file: | *standard input* |
| Output file: | *standard output* |
| Time limit: | 1 second |
| Memory limit: | 256 mebibytes |

You have a big kingdom with the infinite area and $n$ guards guarding the kingdom.

The $i$-th guard stands at the position $(x_i, y_i)$, and his walking speed is $v_i$.

If a point can be reached by a guard, and the time this guard walking to this point is strictly less than other guards, this point is in the charge of this guard.

For every guard check if the area in the charge of him is infinite.

## Input

The input file consists of no more than 80 test cases.

The first line of the each test case contains one integer $n$ ($1 \le n \le 500$). Each of the following $n$ lines contain three integers $x_i$,$y_i$,$v_i$ ($0 \le |x_i|, |y_i|, v_i \le 10^4$).

The input is terminated by test case with $n = 0$, which shouldn't be processed.

## Output

Print a string consisting of $n$ characters. If the area in the charge of the $i$-th guard isn't infinite, the $i$-th character is '0', otherwise it is '1'.

## Examples

| standard input | standard output |
|---|---|
| 3<br>0 0 3<br>1 1 2<br>2 2 1<br>0 | 100 |