

D. Vanya and Computer Game

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Vanya and his friend Vova play a computer game where they need to destroy n monsters to pass a level. Vanya's character performs attack with frequency x hits per second and Vova's character performs attack with frequency y hits per second. Each character spends fixed time to raise a weapon and then he hits (the time to raise the weapon is $1/x$ seconds for the first character and $1/y$ seconds for the second one). The i -th monster dies after he receives a_i hits.

Vanya and Vova wonder who makes the last hit on each monster. If Vanya and Vova make the last hit at the same time, we assume that both of them have made the last hit.

Input

The first line contains three integers n, x, y ($1 \leq n \leq 10^5$, $1 \leq x, y \leq 10^6$) — the number of monsters, the frequency of Vanya's and Vova's attack, correspondingly.

Next n lines contain integers a_i ($1 \leq a_i \leq 10^9$) — the number of hits needed to destroy the i -th monster.

Output

Print n lines. In the i -th line print word "Vanya", if the last hit on the i -th monster was performed by Vanya, "Vova", if Vova performed the last hit, or "Both", if both boys performed it at the same time.

Examples

input
4 3 2 1 2 3 4
output
Vanya Vova Vanya Both

input
2 1 1 1 2
output
Both Both

Note

In the first sample Vanya makes the first hit at time $1/3$, Vova makes the second hit at time $1/2$, Vanya makes the third hit at time $2/3$, and both boys make the fourth and fifth hit simultaneously at the time 1.

In the second sample Vanya and Vova make the first and second hit simultaneously at time 1.