F: Baking pans

Memory Limit : **256 MB**

Maggy loves to bake. She has recently bought three round baking pans of known base area. She baked cakes in the first two of them and intends to take them to a party at a friend's house. However, as carrying two baking pans is quite tricky, it is much more preferable to put both cakes into the third baking pan and carry only it. Maggy cannot really tell whether the cakes will fit. Moreover, she needs to leave some slack between the cakes, as otherwise the icings would mix. Help Maggy out – compute whether the two cakes fit into the third baking pan.

Tests' description

In the first line of the input there is a single natural number $1 \leqslant t \leqslant 1\,000$, which denotes the number of data sets that are described in the following lines, one data set per line. Each of data sets complies with the specification in *One data set*. For an individual data set you should write the result in one line, they should comply to the specification in *Result for one data set* and they should be written in the order in which data sets appear in the input.

One data set

One data set consists of three natural numbers p, d, t ($1 \leqslant p, d, t \leqslant 8 \cdot 10^9$), each separated by a single space, denoting the areas of the first, second and third baking pan, respectively.

Result for one data set

For each data set you should print a single line containing exactly one word: `TAK` (Polish for "yes") if the cakes from the first and second baking pans fit into the third baking pan together, with a non-zero slack, or `NIE` (Polish for "no") in the other case.

Example

Input	Output
3 3 9 25 4 9 25 5 9 25	TAK NIE NIE