Problem

In a finite sequence of positive integers not greater than a billion, representing lengths of line segments, we want to find three numbers such that one can build a triangle from segments of such lengths.

Write a program which examines whether among the line segments - lengths of which are written in the standard input - there exist three such that one can build a triangle from them. If so, the program writes one word TAK ("yes") to standard output. If there exist no such triple, the program writes one word NIE ("no") to standard output.

Input

In the standard input there is a finite sequence of at least three positive integers not greater than 10^9, terminated by the number 0. Each number is written in a separate line. Positive numbers are lengths of line segments, and the number 0 denotes the end of the data.

Output

In the standard output there should be either one word NIE, or three lengths of line segments chosen from the standard input, from which one can build a triangle. The lengths are separated by single spaces.

Example 1

Input:

```
105
325
55
12555
1700
0
```

Output:

```
NIE
```

Example 2

Input:

```
250
1
105
150
325
99999
73
0
```

Output:

```
TAK
```

Note

Note that the input size is REALLY large. Attempting to read in and store all the data will probably result in Time Limit Exceeded or Run Time Error.