

# Trade

2022/2023 SEASON – SIXTH ROUND



Antoine is a retailer. He has 1 lev (marked with BGN). He has a list of all possible exchanges at the exchange offices in his city (which we assume have an unlimited amount of all the currencies they offer) and is now interested in whether through them he can become infinitely rich in BGN with enough exchanges (or at least until an exchange office bans him).

Formally, you are asked whether there exists a sequence of currencies  $x_1 \rightarrow x_2 \rightarrow \dots \rightarrow x_k \rightarrow x_1$ ,  $x_1 = \text{BGN}$  such that  $\text{cost}(x_1, x_2) * \text{cost}(x_2, x_3) * \dots * \text{cost}(x_{k-1}, x_k) * \text{cost}(x_k, x_1) > 1$

## Input

The first line of the file **trade.in** contains the number  $n$  – the number of possible exchanges. The next  $n$  contains 3 values each –  $y_1, y_2, \text{cost}$ . This means that a unit of currency  $y_1$  can be converted into  $\text{cost}$  units of currency  $y_2$ .

## Output

Print “YES” or “NO” in the file **trade.out**. It is guaranteed that you will not receive “wrong answer” due to a precision error.

## Constraints

$$1 \leq n \leq 10^4$$

$10^{-9} \leq \text{cost} \leq 10^9$  has at most 9 decimal digits.

$1 \leq |y_i| \leq 10$ ,  $y_i$  consists of uppercase English letters

**Time limit: 2 sec.**

**Memory limit: 256 MB.**

## Sample test

Input (trade.in)	Output (trade.out)
3 BGN USD 1.86 USD EUR 1.05 EUR BGN 0.52	YES