Exact sum of squares

Time Limit 1 second

Problem

Given the prime factors of a number N, can you find if there are two numbers a, b such that $a^2 + b^2 = N$?

Input

The first line of input contains a number K the number of prime numbers in the primer factorization of N. Each of the next K lines contain two numbers (Pi;Bi) separated by a space, the first number (Pi) is a prime number in the prime factorization of N the second number is the number of times that Pi appears in the prime factorization of N.

$1 \leq K \leq 10$

$1 \leq Pi \leq 10^6$

$1 \leq Bi \leq 100$

You can assume all values for Pi are prime numbers and none of the primer numbers repeat in the input.

Output

For each test case you must print a line with the string "YES." if there are two numbers a, b such that $a^2 + b^2 = N$, print "NO." otherwise.

Sample Input 1	Sample Output 1
4 2 1 3 4 5 1 7 2	YES

Sample Input 2	Sample Output 2
2 3 3 11 4	NO