

Prime Names

Mina and Raju are playing a game. They will provide a list which contains a name and a number to each

other. They have to add the number to the ASCII values of the names character. Then they have to check

that if any of the new added number is prime or not. If for any character of the name the added number is

prime then the name will be considered as prime name. Can you help Mina and Raju to find the prime

name?

Example:

Suppose the list contains two names Mina and Raju. The list will be as following,

Mina 20

Raju 34

For the first name ASCII values are: 77 105 110 97

After addition the values will be: 97 125 130 117

As 97 is prime number so Mina is a Prime Name.

Input

First line of input will be the size of the list $L(L < 100)$. Next L line contains $S(\text{name})$ and

$N(\text{number})$ pairs separated by space. Name is a string with less than 20 characters. The number will be less than 10000.

Output

For every name print "YES" if it is prime name, else print "NO"

Example

Input:

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Mina 20

Shimul 60

Output:

YES

NO