4079 - Gauss Prime

Asia - Changchun - 2007/2008

In the late 1700s', Gauss, a famous mathematician, found a special kind of numbers. These integers are all in the form: $a + b\sqrt{-k}$ .The sum and multiplication ofthese integers can be naturally defined as the follows:

$$(a + b\sqrt{-k}) + (c + d\sqrt{-k}) = (a + c) + (b + d)\sqrt{-k}$$

$$(a + b\sqrt{-k}) * (c + d\sqrt{-k}) = (a * c = b * d * k) + (a * d + b * c)\sqrt{-k}$$

One can prove that the sum and multiplication of these integers constitute the structure called ``imaginary quadratic field" in calculus.

In case $k = 1$, these are common complex numbers.

In case both a and b are integers, these numbers are called ``Gauss integers", and this is the very case that interests people the most in quadratic algebra.

As we all know that every integer can be factorized into the multiplication of several primes (Fundamental theoorem of arithmetic, or unique factorization theorem).

Primes are the integers that can only be divided by 1 and itself. We do have a similar concept in the context ofGauss integer.

If a Gauss integer cannot bee factorized into the multiplication of other Gauss integers (0, 1, -1 exclusive), we call it a ``Gauss Prime" or ``Non-divisible".

Please note that 0, 1 and - 1 are not regarded as gauss primes but $\sqrt{-k}$ is.

However, unique factorization theorem doesn't apply to arbitrary k . For example in the case $k = 5$, 6 can be factorized in two different ways: $6 = 2 * 3$, $6 = (1 + \sqrt{-5}) * (1 - \sqrt{-5})$.

Thanks to the advance of mathematics in the past 200 years, one can prove that there are only 9 integers can be used as k , such that the unique factorization theorem satisfies. These integers are $k = \{1, 2, 3, 7, 11, 19, 43, 67, 163\}$.

Input

The first line of the input is an integer n $(1 < n < 100)$, followed by n lines. Each line is a single case and contains two integers, a and b ($0 \le a \le 10000$, $0 < b \le 10000$) .

Output

To make this problem not too complicated, we just suppose that k is 2.

For every case of the input, judge whether $a + b\sqrt{-2}$ is a gauss prime.

Output the answer `Yes' or `No' in a single line.

Sample Explanation

Please notes that (5, 1) is not a gauss prime because (5, 1) = (1, -1) * (1, 2) .

Sample Input

```
2
5  1
3  4
```

Sample Output

```
No
Yes
```

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