Sohel sir gave an assignment in CSE-315 course instead of a class test. The assignment was to make questions and provide corresponding answers from the chapters 2, 3, 4, 5. Each student is assigned chapter no y according to the formula:

$$y = (Roll \ \% \ 4) + 2$$

I.e. he has to make questions and answers from chapter y. According to this rule, Roll 4 was supposed to make questions and answers from chapter 2 as $(4 \ \% \ 4) + 2 = 2$ and Roll 35 was assigned to chapter 5 as $(35 \ \% \ 4) + 2 = 5$. In the meantime, roll 35 had already made the questions & answers from chapter 5 and Roll 4 got the complete assignment of roll 35. So to copy that assignment Roll 4 wanted to change the divisor 4 of the formula to some number m such that his assignment changes to chapter 5 , that is $(4 \ \% \ m) + 2 = 5$. But he failed to find such number. Now, your problem is similar to the above problem.

Given two number x and y you have to find a positive number m such that $(x \ \% \ m) + 2 = y$. If multiple m is possible, choose the minimum one. If no answer is found print 'Impossible'.

Input

First line of input will contain the number of test cases, $T \leq 125$. Then there follows T lines, each containing two integers x $(0 \leq x \leq 10^{12})$ and y $(2 \leq y \leq x + 2)$.

Output

For each case, print m, if m is found. Otherwise print 'Impossible' (without quotes). See the samples given below for exact formatting.

Sample Input

```
4
4 5
35 5
4 2
11 5
```

Sample Output

```
Impossible
4
1
4
```