Problem BEERDISTRI: Beer Distribution

You have been given a new position as Assorted Construction Manager at the International Construction & Production Corporation. One of your new jobs is to ensure an appropriate beer supply at the newest construction site.

Construction will take place over several days; each day there will be a number of construction workers at the site. Each worker will require at least one bottle of beer. Furthermore, due to union rules, all construction workers have to be given the same number of bottles. As your boss might also be thirsty, you have to ensure that after distribution of the bottles to the workers, a certain number of bottles is left over.

Sadly, buying bottles must be handled by the internal corporate procurement committee. In order to minimize their workload, they require the number of bottles used daily to be the same for every day, even though that might lead to buying more bottles.

Given the number of days, the number of workers and leftover bottles for each day, you must determine the smallest number of bottles that fulfill these requirements, if this is possible at all.

Input

Input starts with the number of test cases on a line. Each test case starts with the number of days d ($1 \leq d \leq 250$), on a line. Then, d lines follow, each containing w_d (the number of workers on day d, with $2 < w_d < 2^{60}$) and l_d (the number of leftover bottles for day d, with $0 \leq l_d < w_d$). The least common multiple of the w_d values will be smaller than 2^{60}

Output

For each test case, print a line with the number of bottles to be used every day, if a solution exists. Otherwise, print a line with the string "Impossible".

Sample Input 1

```
2
3
3 2
4 2
5 1
2
4 3
6 2
```

Sample Output 1

```
26
Impossible
```