E ETA

Time limit: 2s

You want to design a level for a computer game. The level can be described as a connected undirected graph with vertices numbered from 1 to n. In the game, the player's character is dropped at one of the n vertices uniformly at random and their goal is to reach the exit located at vertex 1 as quickly as possible. Traversing an edge takes exactly 1 second.

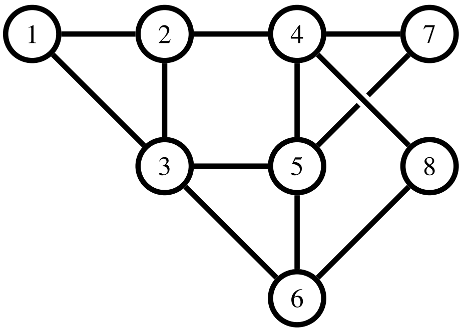

Figure E.1: Illustration of Sample Output 3, a level where the average optimal time to reach vertex 1 is $\frac{7}{4}$.

The difficulty of the level is determined by the average optimal time to reach the exit. Given a target value for this average optimal time, construct a level so that this target value is reached. See Figure E.1 for an example.

Input

The input consists of:

- One line with two coprime integers a and b ($1 \leq a, b \leq 1000$) separated by a '/', giving the desired average optimal time to reach the exit as the fraction $\frac{a}{b}$.

Output

If no connected graph with the average optimal time $\frac{a}{b}$ to reach vertex 1 exists, output "`impossible`". Otherwise, output one such graph in the following format:

- Two integers n and m ($1 \leq n, m \leq 10^6$), the number of vertices and the number of edges.
- m pairs of integers u and v ($1 \leq u, v \leq n$), indicating an edge between vertices u and v.

The graph may include self loops and parallel edges. You are given that if there exists a valid graph, then there also exists one with $1 \leq n, m \leq 10^6$.

If there are multiple valid solutions, you may output any one of them.

Sample Input 1	Sample Output 1
`1/2`	`2 1` `1 2`

Sample Input 2	Sample Output 2
`1/3`	`impossible`

Sample Input 3	Sample Output 3

`7/4`	`8 12`
	`1 2`
	`1 3`
	`2 3`
	`2 4`
	`3 5`
	`3 6`
	`4 5`
	`5 6`
	`4 7`
	`5 7`
	`4 8`
	`6 8`