Problem D: Devious Dates

Time limit: 1 second

For this year's Olympic Games, the organizers plan two spectacular joint live TV shows, each showcasing and celebrating all the disciplines. The first of these shows will air a days after Day 1 of the Games, and the second follows m days after the first.

Doreen is responsible for determining the event days of the disciplines. Notably, subsequent events of the same discipline must be the same number of days apart so that the athletes can benefit from a structured schedule. Of course, all disciplines must have an event scheduled on the days on which there is a joint TV show. The day of the second joint TV show is also the last day of the Olympic Games, so there are no event days of any discipline after it.

Naturally, Doreen wants to make the schedule simple for spectators and athletes to understand. Thus, the joint TV shows should be exactly on those days on which every discipline has an event scheduled – neither on more nor on fewer days. For the same reason, no two disciplines may have the same schedule.

Doreen has some difficulty coming up with a schedule for the disciplines that fits all these constraints and has asked you to assist her. An exemplary schedule for three disciplines is given in Figure D.1.

Day 1	—	Archery	—
Day 2	Road cycling	Archery	—
Day 3	—	Archery	—
Day 4	Joint live TV show		
Day 5	—	Archery	—
Day 6	Road cycling	Archery	—
Day 7	—	Archery	—
Day 8	Road cycling	Archery	—
Day 9	—	Archery	Football
Day 10	Road cycling	Archery	—
Day 11	—	Archery	—
Day 12	Road cycling	Archery	—
Day 13	—	Archery	—
Day 14	Joint live TV show		

Figure D.1: Illustration of Sample Output 3. Note that on Days 4 and 14 Road cycling, Archery and Football all have an event scheduled.

Input

The input consists of:

- One line with three integers a, m, k ($0 \leq a < m \leq 10^{12}$, $1 \leq k \leq 10^6$), the number of days from Day 1 of the Olympic Games to the first joint TV show, the number of days between the first and second joint TV show, and the number of disciplines.

Output

If it is impossible to schedule the disciplines as needed, output "`impossible`".

Otherwise, output "`possible`" followed by k schedules of disciplines. For each discipline, output the number of days from Day 1 of the Olympic Games to the first event day of this discipline (potentially a joint TV show), followed by the number of days between subsequent event days of this discipline.

Given the number of days between subsequent event days of a discipline, pick the earliest possible first event day. If there are multiple valid solutions, you may output any one of them.

Sample Input 1	Sample Output 1
`7 15 5`	`impossible`

Sample Input 2	Sample Output 2

`21 105 4`	`possible`
	`21 35`
	`0 7`
	`0 21`
	`6 15`

Sample Input 3	Sample Output 3

`3 10 3`	`possible`
	`1 2`
	`0 1`
	`3 5`

Sample Input 4	Sample Output 4
`7 15 1`	`possible` `7 15`

Sample Note: Two schedules are different if one has an event day the other schedule does not have. Therefore, in Sample 1, there are only four different possible schedules, namely "`7 15`", "`2 5`", "`1 3`" and "`0 1`". Consequently, the answer is "`impossible`".