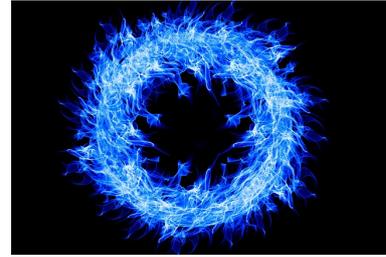


# Problem J: Joint Jinx

Time limit: 1 second

On their quest to destroy the horcruxes, Harry, Ron and Hermione have returned to Hogwarts to search for the Lost Diadem of Ravenclaw, which they suspect has been turned into one of these dark artifacts. It does not take long before their presence is noticed, and now the Hogwarts professors and the members of the Order of the Phoenix are shielding the castle with various protective jinxes and charms to prepare for the arrival of Voldemort and the Death Eaters.



Ring of Fire by Fruity-Paws on Pixabay

One of the most powerful charms in their repertoire is *Repello Inimicum*, which creates a near impenetrable barrier that will disintegrate anything that tries to pass through it. The charm needs to be performed by  $n$  wizards and witches working together. Each of them uses their wand to draw a large circle in the sky while chanting the incantation. The potency of the charm depends on the number of points where two or more of these circles touch or intersect.

For simplicity we assume that the  $n$  circles that make up the charm are all drawn in the same plane. Given  $k$ , the number of intersections that is needed for the charm to be the most potent, find a possible arrangement of the  $n$  circles so that there are exactly  $k$  intersection points. Two circles touching in a point counts as a single intersection. If more than two circles intersect in some point, then that point is only counted once.

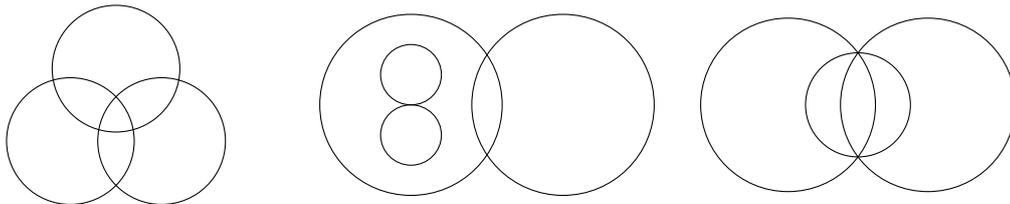


Figure J.1: Illustrations of the first, third and fourth sample cases.

## Input

The input consists of:

- One line with two integers  $n$  and  $k$  ( $1 \leq n \leq 10, 0 \leq k \leq 100$ ).

## Output

If there is no solution, output `impossible`. Otherwise, output  $n$  lines, each with three integers  $x, y$  and  $r$  ( $-1\,000 \leq x, y \leq 1\,000, 1 \leq r \leq 1\,000$ ) giving the center  $(x, y)$  and radius  $r$  of one of the circles. The circles must be distinct. If there is more than one solution, any one of them will be accepted.

### Sample Input 1

3 6

### Sample Output 1

0 0 7  
10 0 7  
5 8 7

**Sample Input 2**

5 100

**Sample Output 2**

impossible

**Sample Input 3**

4 3

**Sample Output 3**0 1 1  
0 -1 1  
0 0 3  
5 0 3**Sample Input 4**

3 2

**Sample Output 4**0 0 5  
4 0 3  
8 0 5