

Problem E: Evening Entertainment

Time limit: 1 second



A tailor had three sons. While away from home, each son has obtained a magical item. The first one obtained a magical table, that decks itself with the finest food and drinks when its owner says “Table, deck yourself!”. The second son got a magical donkey that produces gold out of its mouth when the owner says “Bricklebrit!”. The youngest son got a magical cudgel. When its owner says “Cudgel, out of the sack!”, the cudgel will clobber someone until its owner says “Cudgel, in the sack!”.



The youngest son on his way to the bar with the table, the donkey and the cudgel. Public Domain on [Wikimedia](#)

Ever since returning home, the three sons and their father go to the local bar. In the bar, the oldest son brings his table and proclaims “Table, deck yourself” so that they can eat and drink all night. The second son brings his donkey and says “Bricklebrit!” to produce gold as a gift for the barkeeper while they stay.

The regulars in the bar often play a trick-taking card game. The objective of the game is for each player to correctly bid on the number of tricks they themselves will take during the subsequent round of play.

The game is played in multiple rounds. Before each round, every player draws hand cards equal to the current round number. In other words: for the first round, every player draws one card. In the second round, every player draws two cards, and so forth. After the cards are drawn, the round starts. For each trick, every player plays a card and then a complicated set of rules is applied to decide which player takes the trick. The players play one trick after the other until they have no more cards. Afterwards either cards are drawn for the next round or the game ends.

After all cards of a round have been played, points are awarded to each player for a correct bid and subtracted for an incorrect bid. For a correct bid, 20 base points are awarded plus 10 points for each taken trick. For an incorrect bid, they lose 10 points for each trick they took above or below their bid. The points obtained in every round are summed up and the player with the most points after all rounds have been played is the winner.

It is a well-known fact among the players that this is a highly skilled game. Even with the worst cards, you can take all the tricks in a round, if you play smart. On the other hand, you can end up with no tricks taken even with the best cards.

One day a player suggests a challenge: using the fact that players can force an arbitrary distribution of tricks in any given round, can the group play n rounds of the game so that every player ends with 0 points?

Input

The input consists of:

- One line with two integers n and k ($1 \leq n \leq 60$, $1 \leq k \leq 6$), the number of rounds and the number of players.

It is guaranteed that there are enough cards in the deck to play n rounds.

Output

The output should consist of n lines, one for each round. Each line should contain 2 integers for each player, the number bid b_i ($0 \leq b_i \leq 10^6$) by the player followed by the number of tricks taken. Note that the total number of tricks taken in round i must be i . If this is not possible, output “impossible”.

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

Sample Input 1

3 3

Sample Output 1

1	0	0	0	0	1
1	1	2	1	1	0
0	2	2	1	0	0

Sample Input 2

1 4

Sample Output 2

impossible

Notes

For Sample 1, the point stats after each round are as follows:

Player:	1	2	3
Round 1	-10	20	-10
Round 2	20	10	-20
Round 3	0	0	0