Problem K. XOR Dice

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given two integers n and d.

Find n dice with faces labelled with nonnegative integers not more than 10^6 such that:

- for each die, the six numbers written on its faces are all distinct, and
- if you roll all dice, the bitwise XOR of the n numbers on top is **always** divisible by d.

Under the given constraints, we can prove that such dice always exist.

Input

The only line contains two integers n and d ($1 \le n \le 100$; $2 \le d \le 60$) — the number of dice and the number their XOR has to be divisible by, respectively.

Output

Output n lines, the i-th of which contains six distinct space-separated nonnegative integers at most 10^6 - the faces of the i-th die.

If there are multiple possible answers, output any of them.

Example

standard input	standard output
3 2	1 3 5 7 9 11 3 5 7 9 11 2023 0 2 4 6 100000 10

Note

There are three dice:

- Die 1 has faces $[1, 3, 5, 7, 9, 11]$.
- Die 2 has faces $[3, 5, 7, 9, 11, 2023]$.
- Die 3 has faces $[0, 2, 4, 6, 100000, 10]$.

Suppose we rolled the dice, and they landed on 7, 3, and 2. Then their bitwise XOR is $7 \oplus 3 \oplus 2 = 6$, which is a multiple of 2.