Permutation

A permutation is a sequence of integers p_1, p_2 ... p_n, consisting of n distinct positive integers, each of which doesn't exceed n. Let's denote the i-th element of permutation p as p_i. We'll call number n the size of permutation p_1, p_2 ... p_n.

Nickolas adores permutations. He likes some permutations more than the others. He calls such permutations perfect. A perfect permutation is such permutation p that for any i ($1 = i = n$) (n is the permutation size) the following equations hold $p_{p_i} = i$ and $p_i \neq i$. Nickolas asks you to print any perfect permutation of size n for the given n.

Input

First line will contain number of test case T, followed by T lines.

Each line contains a single integer n ($1 \leq n \leq 100$) — the permutation size.

Output

If a perfect permutation of size n doesn't exist, print a single integer -1. Otherwise print n distinct integers from 1 to n, p_1, p_2 ... p_n — permutation p, that is perfect. Separate printed numbers by a space.

Example

Input:
3
1
2
4

Output:
-1
2 1
2 1 4 3