Sum to 0

You are given an integer N.

Construct an array A of size N, with all non-zero elements, such that the sum of elements is 0 and that the absolute values of all elements do not exceed 3.

Formally, find an array A of N elements such that:

- $A_1 + A_2 + \ldots + A_N = 0$
- $|A_i|$ is either 1, 2 or 3.

If multiple answers exist, all will be accepted. If no answer exists, print -1.

Input Format

- The first line of input will contain a single integer T, denoting the number of test cases.
- The first and only line of each input contains N - the size of the array.

Output Format

For each test case, output on a new line N integers, $A_1, A_2, \ldots A_N$ satisfying the conditions or -1 if no solution.

If multiple answer exists, all will be accepted.

Constraints

- $1 \leq T \leq 50$
- $1 \leq N \leq 50$

Sample 1:

Input	Output
3 1 2 3	-1 3 -3 1 2 -3

Explanation:

Test Case 1 : There exists no valid arrays of size 1.

Test Case 2 : The arrays $[1, -1]$, $[-1, 1]$, $[2, -2]$, $[-2, 2]$, $[3, -3]$ and $[-3, 3]$ are all accepted.