The square root of a matrix P is defined as a matrix A, where $A^2 = P$. Given a permutation matrix P, either find its square root matrix or report that it does not exist.

Input Input starts with an integer T (≤ 100), denoting the number of test cases. Each case starts with a line containing an integer N(≤ 2000). The next line contains N integers each indexing the column in which the value is 1, row by row.
Output For each case, print the N integers denoting the columns in which the value is 1. Print 'Impossible' if the matrix does not exist. Each case should be separated with a blank line.

Sample Input	Output for the Sample Input
3 4 2 3 0 1 3 1 2 0 3 2 1 0	1 2 3 0 2 0 1 Impossible

Explanation:

P = matrix([
[0, 0, 1, 0],
[0, 0, 0, 1],
[1, 0, 0, 0],
[0, 1, 0, 0]])
A = matrix([
[0, 1, 0, 0],
[0, 0, 1, 0],
[0, 0, 0, 1],
[1, 0, 0, 0]])

P = matrix([
[0, 1, 0],
[0, 0, 1],
[1, 0, 0]])
A = matrix([
[0, 0, 1],
[1, 0, 0],
[0, 1, 0]])

P = matrix([
[0, 0, 1],
[0, 1, 0],
[1, 0, 0]])
A does not exist.

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