```
def rotate(p):
    i = p.index(0)
    return p[i : ] + p[: i]

def swap(p, i1, i2):
    i1 %= len(p)
    i2 %= len(p)
    rv = p.copy()
    rv[i1], rv[i2] = rv[i2], rv[i1]
    return rv

def swaps(p):
    j = 1
    while j != len(p) and p[j] == j:
        j += 1
    if j == len(p):
        return [p]
    i1 = p.index(1)
    tries = [(j, p.index(j)), (0, i1 - 1), (0, i1), (0, -1), (0, -2), (i1, i1 - 1)]
    if len(p) > 2:
        tries.append((i1, p.index(2) - 1))
    return [rotate(swap(p, j, k)) for j, k in tries]

for _ in range(int(input())):
    input()
    v = [int(x) - 1 for x in input().split()]
    for x in min(r for q in swaps(rotate(v)) for r in swaps(q)):
        print(x + 1, end = ' ')
    print()
```