

FOOTBALL

There are n teams in a football league. During a season each team plays with every other team exactly once. Thus, there are $\frac{n(n-1)}{2}$ matches in total. A winner in a match gets 3 points, a loser gets 0 point; in case the match ends with a draw, each team get 1 point.

You have the final standing of the league (how many points each team get), can you determine how many possible results of $\frac{n(n-1)}{2}$ matches? Two results are considered different if there is at least a match between team x and team y in the first result where the outcome is different from the match between team x and team y in the second result.

Input

The input consists of several test cases. Each starts with the number of teams n ($2 \leq n \leq 8$), followed by n non-negative integers the point of i -th team P_i ($0 \leq P_i \leq 3(n-1)$). The input terminates with $n = 0$ and you don't have to process this case.

Output

For each test case, print a string in the format "Case x: y" where x is the number of the test case and y is your result.

Sample input

```
3
6 1 1
4
6 6 6 0
2
2 1
0
```

Sample output

```
Case #1: 1
Case #2: 2
Case #3: 0
```

Explanation

For the first case, the only possible result is team 1 beat both team 2 and team 3, team 2 draw team 3.
For the second case, there are 2 possible results:
Team 4 loses to all other teams, team 1 beats team 2, team 2 beats team 3, team 3 beats team 1.
Team 4 loses to all other teams, team 1 beats team 3, team 3 beats team 2, team 2 beats team 1.