

Count Scorecards

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In a tournament, N players play against each other exactly once. Each game results in exactly one player winning. There are no ties. You have been given a scorecard containing the scores of each player at the end of the tournament. The score of a player is the total number of games the player won in the tournament. However, the scores of some players might have been erased from the scorecard. How many possible scorecards are consistent with the input scorecard?

Input Format

The first line contains the number of cases T . T cases follow. Each case contains the number N on the first line followed by N numbers on the second line. The i th number denotes s_i , the score of the i th player. If the score of the i th player has been erased, it is represented by -1.

Output Format

Output T lines, containing the answer for each case. Output each result modulo 1000000007.

Constraints:

- $1 \leq T \leq 20$
- $1 \leq N \leq 40$
- $-1 \leq s_i < N$

Sample Input:

```
5
3
-1 -1 2
3
-1 -1 -1
4
0 1 2 3
2
1 1
4
-1 -1 -1 2
```

Sample Output:

```
2
7
1
0
12
```

Explanation:

For the first case, there are 2 scorecards possible: {0,1,2} or {1,0,2}.

For the second case, the valid scorecards are {1,1,1}, {0,1,2}, {0,2,1}, {1,0,2}, {1,2,0}, {2,0,1}, {2,1,0}.

For the third case, the only valid scorecard is {0,1,2,3}.

For the fourth case, there is no valid scorecard. It is not possible for both players to have score 1.

For the fifth case, 6-variations of {{3,1,0}[2]}, 3 variations each of {{2,2,0}[2]} and {{2,1,1}[2]}