

## 11125 Arrange Some Marbles

you are given some marbles of  $n$  different color. You have to arrange these marbles in a line. The marbles adjacent with same color form a group. In each group there can be 1 to 3 marble. Adjacent group should have different color and size. The first and last group also should have different color and size. You are given the number of each of these  $n$  marbles. You have count the number of ways you can arrange them in a line maintaining the above constraints. For example you have 4 red marbles and 4 green marbles. You can arrange them in the following 8 way - GGRRRGRR, GRRGGRRR, GRRRRGGR, GRRGGRR, RGGRRRG, RRGGRRG, RRGRGGG, RRRGGRRG.

### Input

Input contains multiple number of test cases. The first line contain the number of test cases  $t$  ( $t < 3000$ ). Each of the next line contains one test case. Each test case starts with  $n$  ( $1 \leq n \leq 4$ ) the number of different color. Next contains  $n$  integers. The  $i$ 'th integer denotes the number of marble of color  $i$ . The number of marbles of any color is within the range 0..7 (inclusive). The color of the marbles are numbered from 1 to  $n$ .

### Output

For each test case output contains one integer in one line denoting the number of ways you can arrange the marbles.

### Sample Input

```
6
2 3 3
2 4 4
2 6 6
3 3 4 5
3 4 5 6
4 2 3 4 5
```

### Sample Output

```
0
8
12
174
1234
1440
```