

Multinomial numbers

You may perhaps know how to find the last nonzero digit of n factorial. This time your task is harder, find the last nonzero decimal digit of the multinomial coefficient:
 $(a_1+a_2+\dots+a_n)!/(a_1!*a_2!* \dots *a_n!)$. Note that this is an extension of the classical problem, since factorials (and binomial numbers) are also multinomial numbers!

Input

An integer T , denoting the number of testcases ($T \leq 10000$). In each line you are given one positive integer ($n \leq 20$), followed by n integers: a_1, a_2, \dots, a_n , where $0 \leq a_i \leq 1000000000$. There are 4 input sets for 10 points.

Output

Output T lines, the case number followed by the last nonzero decimal digit. See the sample output for the correct format!

Example

Input:

```
7
1 0
2 11 9
4 5 7 2 9
3 1000 3000 2000
3 100000000 200000000 300000000
2 4 9
8 1 1 4 7 4 8 9 2
```

Output:

```
Case 1: 1
Case 2: 6
Case 3: 8
Case 4: 6
Case 5: 2
Case 6: 5
Case 7: 4
```

Warning: A naive algorithm will probably solve only the first two input sets.