

Product of factorials (medium)

You need to find the product of the first n factorials, so $1! * 2! * \dots * n!$ modulo p , where $p=63303212889375877567328165411288303907410870625225931671654121339922293885519921$.

Input

An integer T , denoting the number of testcases ($T \leq 10$). Each of the T following lines contains a positive integer, where

$$n \leq 10^8.$$

Output

Output T lines, the case number followed by the answer. See the sample output for the correct format!

Example

Input:

```
7
1
5
100
429
1000
1000000
100000000
```

Output:

```
Case 1: 1
Case 2: 34560
Case 3: 30320185692040509343149810686654647278680728299485184027723296362520679295668953
Case 4: 49116522183503229678644619968184124916695876848076217702050317922528502280661110
Case 5: 38310494067749735972957877453766730719859042112664856832928508845605975573300554
Case 6: 59623175509081913319809873890125269865036398088611331352359071382248773213856402
Case 7: 43046234475587180053977224639514165196068475389708692929440906111909653614719387
```