Rikka with Number

Time Limit: 8000/4000 MS (Java/Others) Memory Limit: 65536/65536 K (Java/Others)
Total Submission(s): 272 Accepted Submission(s): 76

Problem Description

As we know, Rikka is poor at math. Yuta is worrying about this situation, so he gives Rikka some math tasks to practice. There is one of them:

In radix d, a number $K = (A_1A_2...A_m)_d (A_i \in [0, d), A_1 \neq 0)$ is good if and only $A_1 - A_m$ is a permutation of numbers from 0 to $d - 1$.

A number K is good if and only if there exists at least one $d \geq 2$ and K is good under radix d.

Now, Yuta wants to calculate the number of good numbers in interval $[L, R]$

It is too difficult for Rikka. Can you help her?

Input

The first line contains a number $t(1 \leq t \leq 20)$, the number of the testcases.

For each testcase, the first line contains two decimal numbers $L, R(1 \leq L \leq R \leq 10^{5000})$.

Output

For each testcase, print a single line with a single number -- the answer modulo 998244353.

Sample Input

```
2
5 20
123456 123456789
```

Sample Output

```
3
114480
```

Source

2017 Multi-University Training Contest - Team 5

Recommend

liuyiding

Hangzhou Dianzi University Online Judge 3.0
Copyright © 2005-2017 HDU ACM Team. All Rights Reserved.