Problem C

Digit Primes

Input: Standard Input
Output: Standard Output
Time Limit: 4 Seconds

A prime number is a positive number, which is divisible by exactly two different integers. A digit prime is a prime number whose sum of digits is also prime. For example the prime number **41** is a digit prime because **4+1=5** and **5** is a prime number. **17** is not a digit prime because **1+7 = 8**, and **8** is not a prime number. In this problem your job is to find out the number of digit primes within a certain range less than **1000000**.

Input

First line of the input file contains a single integer **N (0<N<=500000)** that indicates the total number of inputs. Each of the next **N** lines contains two integers **t1** and **t2 (0<t1<=t2<1000000).**

Output

For each line of input except the first line produce one line of output containing a single integer that indicates the number of digit primes between **t1** and **t2** (inclusive).

Sample Input

3 10 20 10 100 100 10000	1 10 576

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/*Note: You should at least use scanf() and printf() to take input and produce output for this problem. cin and cout is too slow for this problem to get it within time limit.*/