

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  $N$  ( $0 < N \leq 500000$ ) that indicates the total number of inputs. Each of the next  $N$  lines contains two integers  $t_1$  and  $t_2$  ( $0 < t_1 \leq t_2 < 1000000$ ).

## 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  $t_1$  and  $t_2$  (inclusive).

## Sample Input

```
3
10 20
10 100
100 10000
```

## Sample Output

```
1
10
576
```

**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.