

Lucky Numbers

A number is called *lucky* if the sum of its digits, as well as the sum of the squares of its digits is a prime number. How many numbers between *a* and *b* inclusive, are lucky?

For example, *a* = 20 and *b* = 25. Each number is tested below:

	digit	digit	squares
value	sum	squares	sum
20	2	4, 0	4
21	3	4, 1	5
22	4	4, 4	8
23	5	4, 9	13
24	6	4, 16	20
25	7	4, 25	29

We see that two numbers, 21, 23 and 25 are *lucky*.

Note: These lucky numbers are not to be confused with [Lucky Numbers](#)

Function Description

Complete the *luckyNumbers* function in the editor below. It should return an integer that represents the number of lucky numbers in the given range.

luckyNumbers has the following parameter(s):

- *a*: an integer, the lower range bound
- *b*: an integer, the higher range bound

Input Format

The first line contains the number of test cases *T*.

Each of the next *T* lines contains two space-separated integers, *a* and *b*.

Constraints

- $1 \leq T \leq 10^4$
- $1 \leq a \leq b \leq 10^{18}$

Output Format

Output T lines, one for each test case in the order given.

Sample Input

```
2
1 20
120 130
```

Sample Output

4
1

Explanation

For the first case, the lucky numbers are **11, 12, 14**, and **16**.

For the second case, the only lucky number is **120**.