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.