Baltic OI '13 P2 - Palindrome-Free Numbers

Time limit: 0.6s   **Memory limit:** 128M

Baltic Olympiad in Informatics: 2013 Day 1, Problem 2

A string is a palindrome if it remains the same when it is read backwards. A number is palindrome-free if it does not contain a palindrome with a length greater than 1 as a substring. For example, the number $16\,276$ is palindrome-free whereas the number $17\,276$ is not because it contains the palindrome 727.

Your task is to calculate the total number of palindrome-free numbers in a given range.

Input

The input contains two integers, a and b.

Output

The output should contain one integer: the total number of palindrome-free numbers in the range $a, \dots, b$ (including a and b).

Constraints

$0 \le a \le b \le 10^{18}$

In test cases worth 25 points: $b - a \le 100\,000$.

Sample Input 1

```
123  321
```

Sample Output 1

```
153
```

Sample Input 2

```
123456789  987654321
```

Sample Output 2

```
167386971
```