False induction P52248_en

In the palace of the Caliph of Baghdad Beremiz had to face seven of the greatest scholars of his time, each of which proposed a quiz. One of them was simple:

"In mathematics, is it possible to deduce a false rule from true facts?"

This was the answer of Beremiz:

"Suppose that we want to know how to calculate the square root of a number that has an even number of digits, and that we randomly choose the numbers 2025, 3025 and 9801. After the calculations, the square root of 2025 is 45, that of 3025 is 55, and that of 9801 is 99. But $20 + 25 = 45$, $30 + 25 = 55$, *and* $98 + 01 = 99$, *from which we could wrongly deduce that the square root of a number can be calculated by adding their left and right halves."*

Input

Input consists of several cases, each with two natural numbers x and y with the same even number of digits. Assume $10 \leq x \leq y \leq 10^{18} - 1$.

Output

For every case, print how many numbers exist between x and y inclusively such that their square root is exact and equal to the sum of the left and the right halves of the number.

Sample input	Sample output
1000 9999	3
2025 2025	1
2000 2024	0
2026 3000	0
1000000000 9999999999	4
322132944245434624 322132944245434624	1

Problem information

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