Recall the definition of the Fibonacci numbers:

$$
\begin{aligned}
f_{1} & :=1 \\
f_{2} & :=2 \\
f_{n} & :=f_{n-1}+f_{n-2} \quad(n \geq 3)
\end{aligned}
$$

Given two numbers $a$ and $b$, calculate how many Fibonacci numbers are in the range $[a, b]$.

## Input

The input contains several test cases. Each test case consists of two non-negative integer numbers $a$ and $b$. Input is terminated by $a=b=0$. Otherwise, $a \leq b \leq 10^{100}$. The numbers $a$ and $b$ are given with no superfluous leading zeros.

## Output

For each test case output on a single line the number of Fibonacci numbers $f_{i}$ with $a \leq f_{i} \leq b$.

## Sample Input

10100
12345678909876543210
00

## Sample Output

5
4

