Recall the definition of the Fibonacci numbers:

f1 := 1
f2 := 2
fn := fn−1+fn−2 (n≥3)

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

INPUT FORMAT
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 ≤ b ≤ 10^18. The numbers a and b are given with no superfluous leading zeros.

OUTPUT FORMAT
For each test case output on a single line the number of Fibonacci numbers fi with a≤ fi ≤b.

SAMPLE INPUT
10 100
1234567890 9876543210
0 0

SAMPLE OUTPUT
5
4

EXPLAIN
1
1
2
3
5
8

13 - 7번째
21 - 8번째
34 - 9번째
55 - 10번째
89 - 11번째
.
.
.
1836311903 - 46번째
2971215073 - 47번째
4807526976 - 48번째
7778742049 - 49번째