**How Many Fibs?**

**Time Limit: 2000/1000 MS (Java/Others)    Memory Limit: 65536/32768 K (Java/Others)  
Total Submission(s): 4624    Accepted Submission(s): 1821**

**Problem Description**

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**

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 <= 10^100. 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 fi with a <= fi <= b.

**Sample Input**

10 100

1234567890 9876543210

0 0

**Sample Output**

5

4

**Source**

[University of Ulm Local Contest 2000](http://acm.hdu.edu.cn/search.php?field=problem&key=University+of+Ulm+Local+Contest+2000&source=1&searchmode=source)

**Recommend**

Eddy   |   We have carefully selected several similar problems for you:  [1753](http://acm.hdu.edu.cn/showproblem.php?pid=1753) [1250](http://acm.hdu.edu.cn/showproblem.php?pid=1250) [1147](http://acm.hdu.edu.cn/showproblem.php?pid=1147) [1102](http://acm.hdu.edu.cn/showproblem.php?pid=1102) [1297](http://acm.hdu.edu.cn/showproblem.php?pid=1297)