



HOME CONTESTS GYM PROBLEMSET GROUPS RATING API CANADA CUP 🛣 SECTIONS

PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

# A. Rational Resistance

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

Mad scientist Mike is building a time machine in his spare time. To finish the work, he needs a resistor with a certain resistance value.

However, all Mike has is lots of identical resistors with unit resistance  $R_0$  = 1. Elements with other resistance can be constructed from these resistors. In this problem, we will consider the following as elements:

- 1. one resistor:
- 2. an element and one resistor plugged in sequence;
- 3. an element and one resistor plugged in parallel.

With the consecutive connection the resistance of the new element equals  $R = R_e + R_0$ . With the parallel connection the resistance of the new element equals . In this case  $R_e$  equals the resistance of the element being connected.

Mike needs to assemble an element with a resistance equal to the fraction . Determine the smallest possible number of resistors he needs to make such an element.

# Input

The single input line contains two space-separated integers a and b ( $1 \le a$ ,  $b \le 10^{18}$ ). It is guaranteed that the fraction is irreducible. It is guaranteed that a solution always exists.

# Output

Print a single number — the answer to the problem.

Please do not use the %Ild specifier to read or write 64-bit integers in C++. It is recommended to use the cin, cout streams or the %I64d specifier.

# Examples input

1 1		
output		
1		
input		
3 2		
output		
3		
input		
199 200		
output		
200		

# Note

In the first sample, one resistor is enough.

In the second sample one can connect the resistors in parallel, take the resulting element and connect it to a third resistor consecutively. Then, we get an element with resistance . We cannot make this element using two resistors.

#### → Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

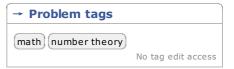
## Codeforces Round #200 (Div. 1)

#### **Finished**

## → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest



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## → Contest materials

- Announcement
- Tutorial

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