

B. Two Buttons

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Vasya has found a strange device. On the front panel of a device there are: a red button, a blue button and a display showing some positive integer. After clicking the red button, device multiplies the displayed number by two. After clicking the blue button, device subtracts one from the number on the display. If at some point the number stops being positive, the device breaks down. The display can show arbitrarily large numbers. Initially, the display shows number n .

Bob wants to get number m on the display. What minimum number of clicks he has to make in order to achieve this result?

Input

The first and the only line of the input contains two distinct integers n and m ($1 \leq n, m \leq 10^4$), separated by a space .

Output

Print a single number — the minimum number of times one needs to push the button required to get the number m out of number n .

Examples

input	Copy
4 6	
output	Copy
2	

input	Copy
10 1	
output	Copy
9	

Note

In the first example you need to push the blue button once, and then push the red button once.

In the second example, doubling the number is unnecessary, so we need to push the blue button nine times.

Codeforces Round #295 (Div. 2)

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 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](#)

→ Problem tags

[dfs and similar](#)
[graphs](#)
[greedy](#)
[implementation](#)
[math](#)
[shortest paths](#)
[*1400](#)

No tag edit access

→ Contest materials

- Announcement [×](#)
- Tutorial (en) [×](#)

Supported by



ITMO UNIVERSITY