Catch That Cow

Language: Default

Time Limit: 2000MS **Memory Limit:** 65536K
Total Submissions: 141453 **Accepted:** 43638

Description

Farmer John has been informed of the location of a fugitive cow and wants to catch her immediately. He starts at a point N ($0 \le N \le 100{,}000$) on a number line and the cow is at a point K ($0 \le K \le 100{,}000$) on the same number line. Farmer John has two modes of transportation: walking and teleporting.

* Walking: FJ can move from any point X to the points $X - 1$ or $X + 1$ in a single minute
* Teleporting: FJ can move from any point X to the point $2 \times X$ in a single minute.

If the cow, unaware of its pursuit, does not move at all, how long does it take for Farmer John to retrieve it?

Input

Line 1: Two space-separated integers: N and K

Output

Line 1: The least amount of time, in minutes, it takes for Farmer John to catch the fugitive cow.

Sample Input

```
5 17
```

Sample Output

```
4
```

Hint

The fastest way for Farmer John to reach the fugitive cow is to move along the following path: 5-10-9-18-17, which takes 4 minutes.

Source

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