Catch the Cat

Time limit: 0.6s **Memory limit:** 256M

One day, Roger's cat is lost. With the advanced GPS device, Roger gets the cat location and wants to catch her immediately. He starts at a point X ($0 \leq X \leq 10^5$) on a number line and the cat is at a point Y ($0 \leq Y \leq 10^5$) on the same number line. Roger has two modes of transportation: walking and jumping.

- Walking: Roger can move from any point P to the points $P-1$ or $P+1$ in a single minute
- Jumping: Roger can jump from any point P to the point $2 \times P$ in a single minute.

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

Input Specification

One line contains two integers X, Roger's initial location, and Y, the cat's location.

Output Specification

One integer, the least amount of time, in minutes, it takes for Roger to catch the cat.

Sample Input

```
5 17
```

Sample Output

```
4
```

Explanation

Roger can take the following path to catch the cat $5 \to 10 \to 9 \to 18 \to 17$ with 4 minutes.