I'm a big fan of watching TV. However, I don't like to watch a single channel; I'm constantly zapping between different channels.

My dog tried to eat my remote controller and unfortunately he partially destroyed it. The numeric buttons I used to press to quickly change channels are not working anymore. Now, I only have available two buttons to change channels: one to go up to the next channel (the $\triangle$ button) and one to go down to the previous channel (the $\triangledown$ button). This is very annoying because if I'm watching channel 3 and want to change to channel 9 I have to press the $\triangle$ button 6 times!

My TV has 100 channels conveniently numbered 0 through 99. They are cyclic, in the sense that if I'm on channel 99 and press $\triangle$ I'll go to channel 0. Similarly, if I'm on channel 0 and press $\triangledown$ I'll change to channel 99.

I would like a program that, given the channel I'm currently watching and the channel I would like to change to, tells me the minimum number of button presses I need to reach that channel.

Input

The input contains several test cases (at most 200).

Each test case is described by two integers a and b in a single line. a is the channel I'm currently watching and b is the channel I would like to go to ($0 \leq a, b \leq 99$).

The last line of the input contains two '`-1`'s and should not be processed.

Output

For each test case, output a single integer on a single line — the minimum number of button presses needed to reach the new channel (Remember, the only two buttons I have available are $\triangle$ and $\triangledown$).

Sample Input

```
3 9
0 99
12 27
-1 -1
```

Sample Output

```
6
1
15
```