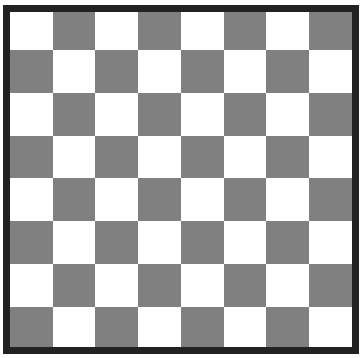
Bloomberg
CODECON

Memory Limit: 1024 MB
Time Limit: 5 s

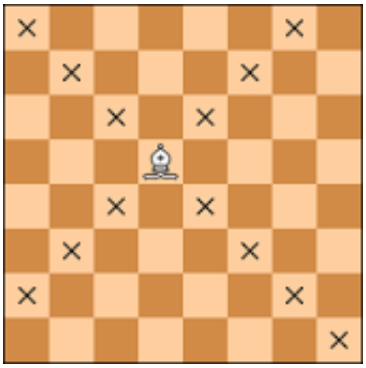
Bishop (150 points)

Introduction

Consider an 8x8 chess board.



A bishop is a chess piece that can only move diagonally.
In the image below, the bishop can only move to one of the blocks marked by an X in a single move.



Given a bishop placed at a certain block on the chess board, and a designated target block, what is the minimum number of moves it would take for the bishop to move to the target block?

Input Specifications

Each block is assigned a number as shown below.

```
1  2  3  4  5  6  7  8
9  10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56
57 58 59 60 61 62 63 64
```

- The first line of the input will contain the block number that the bishop is on
- The second line of the input will contain the block number of the target block

Output Specifications

- Print the minimum number of moves needed by the bishop to reach the target block
- If it is not possible to reach the target block, print -1

Sample Input/Output

Input

```
1
10
```

Output

```
1
```

Explanation

A Bishop can move from Block 1 to Block 10 in 1 move.

Input

```
1
3
```

Output

```
2
```

Explanation

A Bishop can move from Block 1 to Block 10 in the 1st move, and from Block 10 to Block 3 in the 2nd move.