# Simple Path

We are given a $100 \times 100$ square board. The path between any two squares $A$ and $B$ is defined as the sequence of neighbouring squares the first member of which is square $A$ and the last member of which is square $B$.

Two squares are called neighbouring if they have a common side or a common vertex. Each square that is not at the edge of the board has eight neighbouring squares.

The length of a path is defined as the number squares in the path.

**Task.** Write an algorithm to find the length of the shortest path between the squares $A$ and $B$.

**Input.** The input data are two pairs of natural numbers, which indicate the coordinates of the square $A$ and $B$.

**Examples.**

| Input | Output |
|---|---|
| `2 4 5 6` | `4` |

**Constraints.** $1 \leq x_i, y_i \leq 100$.