2021 PROTOTYPE

The prototyping of oojahs, yokeamajigs and doodads is an expensive business and a constant worry for the honorary treasurer at *Widget, Whatsit & Doodah* (est. 1862). Fortunately costs for next season's 'chamacallits are being kept down as "Innovative New Technological Breakthroughs"™ means each component has, at most, a single *output*.

On the prototype blueprints each component has been given an X and a Y co-ordinate. The output of a component is connected to the nearest component with *greater* X and Y co-ordinates. Components are connected by a combination of horizontal and vertical wires, so the distance between the output of a component at (x_1, y_1) and a component at (x_2, y_2) is $x_2\text{-}x_1 + y_2\text{-}y_1$.

There is no output from a component if no other component has greater co-ordinates. If there are multiple nearest components the output is connected at random to one of them. Wires are well insulated so the connections between components are all independent.

For example, suppose that there are components at (0, 1), (1, 0), (3, 3), (4, 4) and (5, 2):

- The output of (0, 1) is connected to (3, 3), 5 units away;
- The output of (1, 0) is also connected to (3, 3), 5 units away;
- The output of (3, 3) is connected to (4, 4), 2 units away;
- Neither (4, 4) nor (5, 2) has an output.

The honorary treasurer would like to know the total length of wire required to produce a prototype.

SAMPLE INPUT

```
5
0 1
1 0
3 3
4 4
5 2
```

The first line of input will consist of a single integer n, $(1 \leq n \leq 2^{18})$, indicating the number of components. This will be followed by n lines, the i^{th} of which will contain x_i then y_i, $(0 \leq x_i, y_i \leq 2^{30})$, the X and Y co-ordinates for the i^{th} component. No two components will share the same X or Y co-ordinate.

SAMPLE OUTPUT

```
12
```

You should output a single integer, the length of wire required to connect the components.