Pizzalandia (pizzalandia)

Filippo grew tired of the cold and rainy winters in Zürich: this year, he decided to spend his holidays in Italy, his home country, and to finally visit his favourite amusement park: *Pizzalandia*.

Pizzalandia, as seen from above, is a rectangle of $X \times Y$ meters, (respectively X meters horizontally and Y vertically). Its biggest attraction is without a doubt the *Pizzatrain*, which runs clockwise along the borders of the rectangle at a fixed speed of 1 meter per second.

Figure 1: Pizzalandia is amazing!

Since Filippo has already explored most of the park, he thinks it's finally time for him to get on the train himself, which can be done simply by being on the border of the rectangle at the same second of the train.

He knows the current (integer) coordinates of the train, T_x and T_y, and he's currently standing in (integer) coordinate W_x, W_y. Inside the park, it's only possible to move horizontally or vertically.

Filippo wants to get on the train quickly, but having noticed that today the park is very crowded, he decided that he will simply choose a direction, move in that direction at a speed of 1 meter per second, and then just wait for the train to reach his location.

Help Filippo by figuring out the minimum time it will him take to board the train with this strategy.

Input

This problem has multiple testcases. The first line contains T, the number of testcases to solve.

Each of the following T lines contains six integers: the horizontal and vertical lengths of Pizzalandia X and Y, the Pizzatrain's horizontal and vertical coordinates T_x and T_y, and finally Filippo's horizontal and vertical coordinates W_x and W_y.

Output

For each testcase, you need to write a single line containing the minimum number of seconds it will take Filippo to get on the train, by following his strategy of moving in only one direction.

Constraints

- $1 \leq T \leq 1000$.
- $1 \leq X, Y \leq 1\,000\,000\,000$.
- $0 \leq T_x \leq X$ and $0 \leq T_y \leq Y$.
- The train is guaranteed to be (and stay!) on the border.
- $0 < W_x < X$ and $0 < W_y < Y$.
- Filippo never starts on the border.

Examples

input	output
1 7 6 4 6 3 4	5

Explanation

This example has a single testcase.

If Filippo moves to the right, it will take him 5 seconds to get on the train: he will reach the border in 4 seconds, but the train will only catch up with him a second later.

Moving in different directions leads to longer waiting times.