

1759C - Thermostat

First let's consider the cases when the answer exists:

- If $a = b$, then the thermostat is already set up and the answer is 0.
- else if $|a - b| \geq x$, then it is enough to reconfigure the thermostat in 1 operation.
- else if exist such temperature c , that $|a - c| \geq x$ and $|b - c| \geq x$, then you can configure the thermostat in 2 operations. If such c exists between l and r , we can chose one of bounds: $a \rightarrow l \rightarrow b$ or $a \rightarrow r \rightarrow b$.
- we need to make 3 operations if times if we cannot reconfigure through one of the boundaries as above, but we can through both: $a \rightarrow l \rightarrow r \rightarrow b$ or $a \rightarrow r \rightarrow l \rightarrow b$

If we can't get the temperature b in one of these ways, the answer is -1 .

Solution

```
def solve():
    l, r, x = map(int, input().split())
    a, b = map(int, input().split())
    if a == b:
        return 0
    if abs(a - b) >= x:
        return 1
    if r - max(a, b) >= x or min(a, b) - l >= x:
        return 2
    if r - b >= x and a - l >= x or r - a >= x and b - l >= x:
        return 3
    return -1
```

```
t = int(input())
for _ in range(t):
    print(solve())
```