# Lego Robot

| Time Limit | 0.5s |
| --- | --- |
| Memory Limit | 64MB |

## Description

Right now you're a 2nd semester student in BIT. There is a course called Introduction to Engineering and Design (PRD). In this course, the final assignment is to create and program a lego robot to solve problem given by assistant. The robot is placed on cartesian field. The robot's initial position in on coordinate $(a, b)$ and the robot's destination is on coordinate $(c, d)$.

There are 3 types of move that robot could do if it's current position is $(x, y)$:

- Vertical move from $(x, y)$, robot could move to (x, y+1) or $(x, y-1)$.

- Horizontal move from $(x, y)$, robot could move to $(x + 1, y)$ or $(x - 1, y)$.

- Diagonal move from $(x, y)$, robot could move to $(x+1, y+1)$, $(x+1, y-1)$, $(x-1, y+1)$, or $(x-1, y-1)$.

The problem is to move the robot from initial position to destination using exactly $K$ moves. for each diagonal move your robot do, you and your team gain 1 point. Since your teammate are curious about maximum of points you could get, they ask you as the robot programmer to calculate the maximum points your team could get for each given problem.

## Input Format

first line of input, consist of a positive integer $T$, the number of problems given by assistant.

Next T lines, for each $1 \leq i \leq T$ line, consist 5 integers $a_i$, $b_i$, $c_i$, $d_i$, and $K_i$. the initial position $(a_i, b_i)$ of robot, the final position $(c_[i], d_i)$ of robot, and the number of moves for robot to reach it's destination.

## Output Format

Print $T$ lines, for each $1 \leq i \leq T$ line, print $i$-th answer to $i$-th problem. if the robot couldn't reach destination in exactly $K$ moves, print "-1".

## Constraint

- $1 \leq T \leq 10^5$

- $-10^{18} \leq a_i, b_i, c_i, d_i \leq 10^{18}$

- $0 \leq K_i \leq 10^{18}$

## Sample Input 1

```
3
0  0  2  2  3
2  0  3  1  21
10  20  20  21  9
```

## Sample Output 1

1
21
−1