时间限制：C/C++/Rust/Pascal 2秒，其他语言4秒

空间限制：C/C++/Rust/Pascal 512 M，其他语言1024 M

64bit IO Format: %lld

题目描述

Alice and Bob are playing a game with one piece on a grid board with $n$ rows and $m$ columns. The rules of the game are as follows:

- The grid in the $l$-th line and the $c$-th column is called of position $(l, c)$ , and is colored **white** when $l$ and $c$ have the same parity and **black** when different.
- The piece must be within a certain grid at any moment; in other words, the position of the piece can also be represented by an integer pair $(l, c)$ , which means that the piece is in the grid of the $l$-th line and the $c$-th column, and $1 \leq l \leq n, 1 \leq c \leq m$ always holds.
- On the board there are $k$ grid(s) specialized in advance, the $i$-th special grid is of position $(l'_i, c'_i)$ and has a positive integer value $w_i$ .
- The game lasts for a number of round(s) (starting with $1$):
  - Initially, the board is empty and the piece is not placed yet;
  - In the first round, Bob chooses a color $col$ either white or black, and for each special grid (of the $i$-th) , he can make it **active** at the cost of $w_i$ or **inactive** with no cost;
  - In the second round, Alice chooses an arbitrary grid of color $col$ to place the piece;
  - In the third round and further odd rounds, Bob must move the piece along the line by 1 unit, from position $(l, c)$ to either $(l + 1, c)$ or $(l - 1, c)$. Note that after the move $1 \leq l \leq n$ should still be satisfied, and Bob can't leave the piece not moved in the round.
  - In the fourth round and further even rounds, Alice must move the piece along the column by 1 unit, from position $(l, c)$ to either $(l, c - 1)$ or $(l, c + 1)$. Similarly, after the move $1 \leq c \leq m$ should still be satisfied, and Alice can't leave the piece not moved in the round.
- Whenever the piece lies in any **active** grid, Alice loses and Bob wins; else if the game lasts for $10^{100}$ rounds (or forever), Bob loses and Alice wins.

Assuming that both players are smart enough, and given the parameters of the grid board ($n$ and $m$) and special grid(s) ($l'_i, c'_i$ and $w_i$); for each chosen color, please calculate the minimal total cost for Bob to activate some special grid(s) to win, or report that it's impossible.

Note that you may answer multiple queries.

输入描述：

> The first line contains the number of test cases $t$ ($1 \leq t \leq 2 \times 10^5$). The description of the test cases follows.