

D	Do You Want to Build a Christmas Tree?	
	Time Limit (seconds)	1
	Memory Limit (MB)	256

Of course, you do.

Don't even try to resist it — you can already feel it deep inside: the primal urge to build a Christmas tree. Right here, right now. But beware: an ordinary Christmas tree will not do. You must build a **Special Christmas Tree**.

For the purposes of this problem, a Christmas Tree is simply a binary tree — that is, a connected, acyclic graph where each node has degree at most three.

So, what makes it **Special**?

You are given three integers P , Q , and R . Suppose your Christmas Tree has N nodes, labeled 1 through N . The following conditions must hold:

- There are exactly P pairs (i, j) , with $1 \leq i < j \leq N$, such that the distance between node i and node j is exactly 1.
- There are exactly Q pairs (i, j) , with $1 \leq i < j \leq N$, such that the distance between node i and node j is exactly 2.
- There are exactly R pairs (i, j) , with $1 \leq i < j \leq N$, such that the distance between node i and node j is exactly 3.

Here, the distance between two nodes means the number of edges on the unique simple path between them.

Your task is to construct such a **Special Christmas Tree** or declare that it is impossible.

INPUT

The input consists of multiple test cases. The first line contains an integer T ($1 \leq T \leq 1000$) — the number of test cases.

Each of the next T lines contains three integers P , Q , and R ($1 \leq P \leq 10^5, 0 \leq Q, R \leq 10^6$) — the designated counts of pairs of nodes at distances 1, 2, and 3, respectively.

The sum of P over all test cases does not exceed 10^5 .

OUTPUT

For each test case: Print a line with a single integer N — the number of nodes in your tree.

Then print $N-1$ lines, each with two integers u and v ($1 \leq u, v \leq N$), denoting an edge between nodes u and v .

If there are multiple possible trees, output any of them.

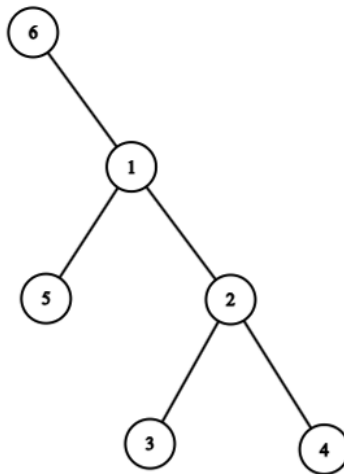
If no Special Christmas Tree exists, output -1 .

EXAMPLE

INPUT	OUTPUT
3 2 1 0 5 6 4 3 7 1	3 1 2 2 3 6 1 2 2 3 2 4 1 5 1 6 -1

NOTES

The Special Christmas Tree for the second test case can be visualized as:



There are 5 node pairs with distance 1: (1,2), (2,3), (2,4), (1,5), and (1,6).

There are 6 node pairs with distance 2: (1,3), (1,4), (2,5), (2,6), (3,4), and (5,6).

There are 4 node pairs with distance 3: (3,5), (3,6), (4,5), and (4,6).