DWITE '09 R2 #4 - Breadth First Not Quite Tree

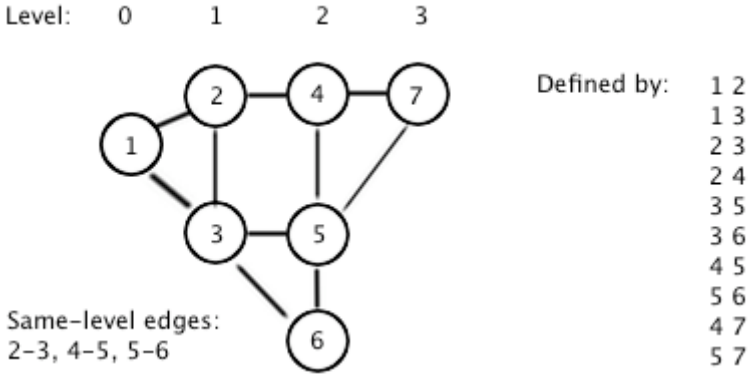
Time limit: 2.0s **Memory limit:** 64M

DWITE Online Computer Programming Contest, November 2009, Problem 4

In a graph, each node has a "*level*" – a distance to the root (start) node. One of the special properties that could be extracted, is that if there is a connection between two nodes of the same level, then there is also a cycle of odd length in the graph, which in turn gives us more properties about the structure.

The input will contain 5 test cases: A single positive integer $1 \leq N \leq 50$, followed by N lines describing the graph. Each line is two integers, IDs of nodes, separated by a space. Node IDs are positive integers less than 100. The root (start) node has ID 1.

The output will contain 5 lines, integer count of how many pairs of nodes have a connection, such that the shortest path from 1 to each node is equal.



Sample Input

```
3
1 2
3 2
1 3
10
1 2
1 3
2 3
2 4
3 5
3 6
4 5
5 6
4 7
5 7
```

Sample Output

```
1
3
```

Problem Resource: DWITE