Editorial - Transforming Bowsons

This question could be modelled as a BFS tree.

The start node will be **X** given in the question. We need to add new nodes according to the operations given. Paths will be created if there is a direct relationship between the two nodes, i.e. if **b** is the result after performing one of the operations on **a**, then there is a path between **a** and **b**. It is also needed to keep track of the nodes created to avoid redundancy. While constructing the tree if node **Y** is found, then the height from the starting node, **X** to **Y** will be the number of operations needed to transform **X** to **Y**. As we are creating a BFS tree, the depth is increased level by level. Therefore, the height gives the minimum number of operations needed. If **X** or **Y** exceeds 100,000 or is less than or equal to 0, and none of the operations transform **X** to **Y**, or when the tree is completed and **Y** value is not reached, then it is considered as impossible to transform **X** to **Y**.

The Time complexity is O(V + E) where **V** is the number of nodes and **E** is the number of edges in the BFS tree.

Eg: The following diagram represents the BFS tree for the test case given in the question.