Program 3

def find(state)

    to find the (i , j) position of -1 in the puzzle and return it

def DFS(source, target, limit, visited_States)

    if source == target

        return True

    if limit <=0

        return False

    append source in visited_States

    get all the possible moves by using possibleMoves function

    iterate through the moves and call DFS recursively sending limit -1 in

        place of limit

        if it returns true

        return true

    return false

def possible moves(state,visited_States)

    use find to find -1 in states

    try moving in all the possible directions and save it into the array

    return the array

```
def iddfs(source,target,depth)

    iterate from 0 to depth

        and call function dfs with sending visited_states as an empty array

        if it returns true

        return true

    return false


def main()

    iterate a loop for maximum allowed depth and then call iddfs sending

        that depth

    if it return true break

main()
```