Problem 5

When the graph is represented as a adjacency list the time complexity for both DFS and BFS are $O(V+E)$ when V is vertices and E is edges of the graph.

When represented as adjacancy matrix, for checking if an edge exists between two vertiees we have run through all the vertices in the worst case which is $O(V)$. So the time complexity for traversing a graph representing matrix Both requires $O(V^2)$ time complexity for both BFS and DFS.

BFS will get the victory road because it finds the shortest path by going through all adjacant nodes. where BFS goes through deep which may take time.