Task # 3

The time complexity for problem 1 is $O(M \log(N))$ when it is for the use of dijkstra algorithms. On the other hand, for problem 2, the graph also needs M nodes and N places. Now, here also works the adjacency list where time complexity is different $O(N+M)$. M is node and N is places and so every vertex will find other vertex connected with them and so, the priority will be $O(\log N)$. Again, for every road, there is every edges and so so time complexity $O(M \log(N))$.

So, M road and N places there is
also complexity which actually adds
all these complexity. So, T will be

$$O(M.\log N) \times O(T) + O(N+M)$$

Now, for each trans., BFS algorithm is
used. BFS will have $O(N+M)$ ~~alg to~~ as
the solution and in graph 1st and
last ~~woa~~ path is equal.