Linear Optimisation Questions

Q1)

Assumption
1. Polytope is non-degenerate.
2. Polytope is bounded
3. Rak of A is n

Implement the simplex algorithm to maximize the objective function, You need to implement the method discussed in class.

Input: CSV file with m+2 rows and n+1 column.
The first row excluding the last element is the initial feasible point z of length n
The second row excluding the last element is the cost vector c of length n
The last column excluding the top two elements is the constraint vector b of length m
Rows third to m+2 and column one to n is the matrix A of size m*n

Q2)

Assumption
1. Polytope is non-degenerate.
2. Rak of A is n

Implement the simplex algorithm to maximize the objective function, You need to implement the method discussed in class.

Input: CSV file with m+2 rows and n+1 column.
The first row excluding the last element is the initial feasible point z of length n
The second row excluding the last element is the cost vector c of length n
The last column excluding the top two elements is the constraint vector b of length m
Rows third to m+2 and column one to n is the matrix A of size m*n

Output: You need to print the sequence of vertices visited and the value of the objective function at that vertex

Q3)

Q4)

Assumption
1. Rak of A is n

Implement the simplex algorithm to maximize the objective function, You need to implement the method discussed in class.

Input: CSV file with m+1 rows and n+1 column.

- The first row excluding the last element is the cost vector c of length n
- The last column excluding the top element is the constraint vector b of length m
- Rows two to m+1 and column one to n is the matrix A of size m*n

Output: You need to print the sequence of vertices visited and the value of the objective function at that vertex