

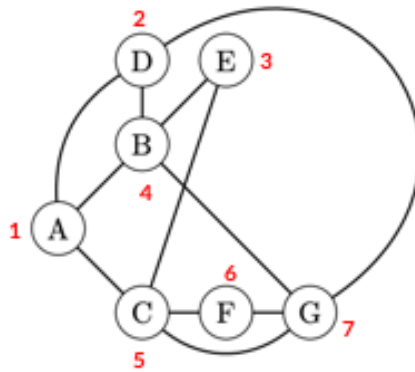
Worksheet 19 Solution

Hyungmo Gu

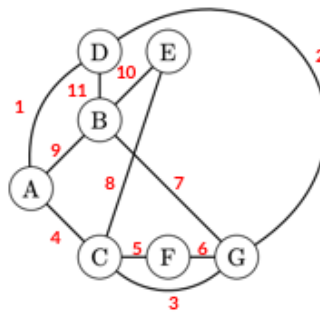
April 7, 2020

Question 1

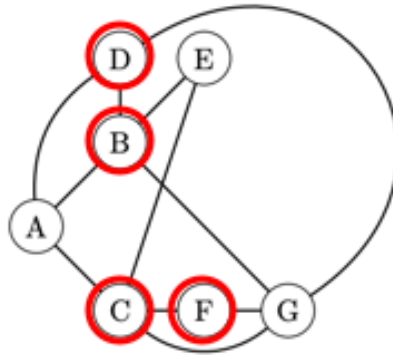
a. By the figure below, we can conclude there are 7 vertices.



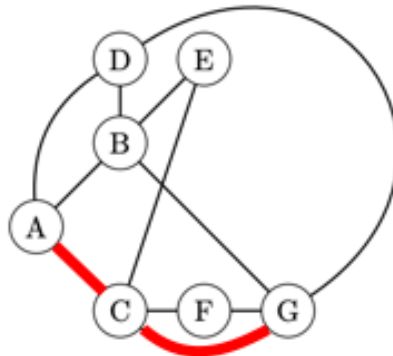
b. By the figure below, we can conclude there are 11 edges.



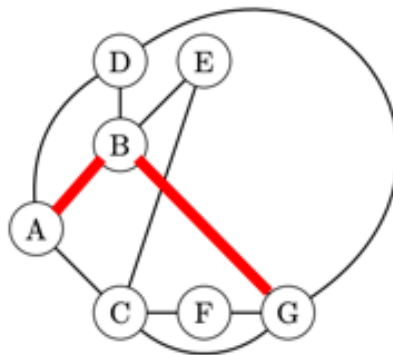
c. By the figure below, we can conclude there are 4 vertices adjacent to G.



d. By the figure below, we can conclude the distance between A and G is 2.

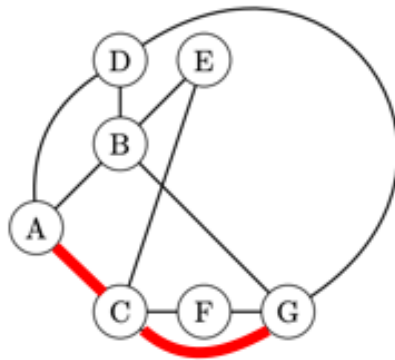


There are 2 shortest paths between A and G. One is the path from A to C to G as shown above, and the other is the path from A to B to G

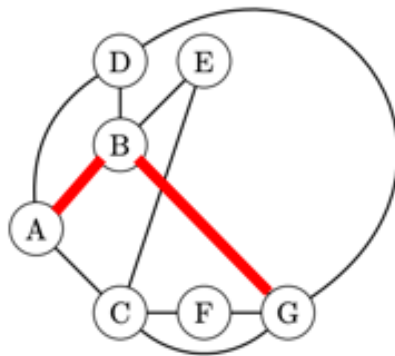


Correct Solution:

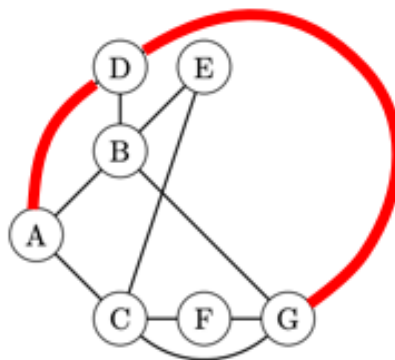
By the figure below, we can conclude the distance between A and G is 2.



There are 3 shortest paths between A and G. One is the path from A to C to G as shown above, and the other is the path from A to B to G



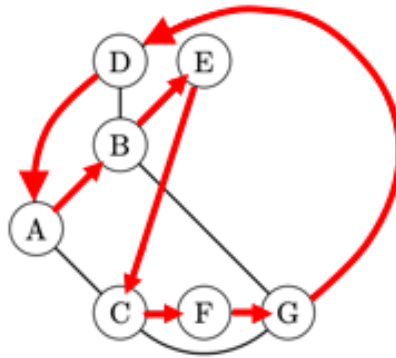
and the last one is from A to D to G



Notes:

- **Distance** is the number of edges in a shortest path.

e. Path $[C, F, G, D, A, B, E]$ is one example that goes through all vertices of the graph.



Question 2

Question 3