	Questions	Out of	Total
Graph Theory Basics	1, 2, 8	10	
Euler Paths and Circuits	3, 4, 5	6	
Hamiltonian Paths and Circuits	6, 7	4	
Optimal Trees	8	4	
Optimal Path	9	4	
Critical Path	10	4	
Chromatic Number	11	4	

Graph Theory Assignment

All work on this assignment must be your own.

1. Draw a graph containing at least 5 vertices, at least 8 edges (including one set of parallel edges and one loop).

2. Using your graph above:

       a. identify a simple path

       b. identify a path that is not simple

       c. identify a simple circuit

       d. identify a circuit that is not simple.

3. Create a graph that contains an Euler Path, and identify the Euler Path in the graph.

4. Create a graph that contains an Euler Circuit and identify the Euler Circuit

5. Create a graph that does not contain an Euler Path or an Euler Circuit.

6. Create a graph that contains a Hamiltonian Path.

7. Create a graph that contains a Hamiltonian Circuit.

8. Create a graph that contains at least 6 vertices and at least 9 edges. Include weights on the edges. Now create a tree of minimum value from your graph.

9. Draw a graph containing at least 5 vertices and at least 8 edges where the path of minimum value from A to C is 16.

10. Complete the table below to create a scenario in which the minimum time it takes to complete the task is 25 days. Create a graph from the table and verify the minimum time.

Step	Time (days)	Prior Steps
A		None
B		
C		
D		
E		
F		
G		
H	None	

11. Create a graph that has a chromatic number of 4.