Graph Theory Practice Questions

1. In a connected graph with 10 vertices, each vertex has a degree of

3. How many edges are in the graph?

2. A simple graph has 15 edges and 8 vertices. If the graph is disconnected, what is the maximum number of connected components it can have?

3. A graph has 12 vertices and 20 edges. If the graph is planar, what is the maximum number of faces it can have?

4. In a complete bipartite graph K_{m,n}, where m = 5 and n = 7, how many edges are there?

5. A graph has 8 vertices and 16 edges. If the graph is regular, what is the degree of each vertex?

6. In a graph with 15 vertices, each vertex has a degree of either 3 or

5. If there are 40 edges in the graph, how many vertices have a degree of 5?

7. A graph has 20 vertices and 100 edges. If the graph is connected and Eulerian, how many vertices have an even degree?

8. In a weighted graph, the sum of the weights of all edges is

50. If the graph has 12 vertices and 18 edges, what is the maximum possible weight of an edge?

9. A graph has 10 vertices and 25 edges. If the graph is planar and connected, what is the maximum number of vertices of degree 2 it can have?

10. In a graph with 18 vertices, each vertex has a degree of either 2 or

4. If there are 60 edges in the graph, how many vertices have a degree of 2? I hope you find these problems challenging and helpful!