CS113/DISCRETE MATHEMATICS-SPRING 2024

Worksheet 27

Topic: Hamilton Path And Circuits

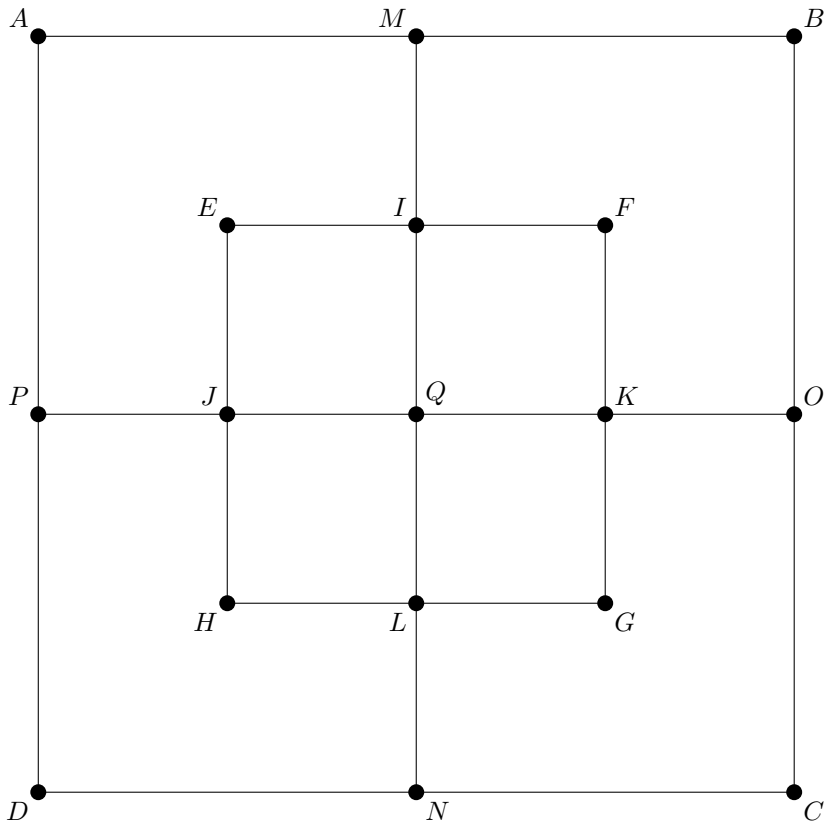
Now that we've explored Euler circuits, it's time to move on to Hamiltonian circuits. Unlike Euler circuits, Hamiltonian circuits visit each vertex exactly once, forming a closed loop in the graph. These circuits take us on a journey where we traverse every corner of the graph, ensuring no vertex is left unexplored. Happy Learning!

Student's Name and ID: _____

Instructor's name: _____

1. Determine whether the given graph has a Hamilton circuit. If it does, find such a circuit. If it does not, give an argument to show why no such circuit exists.

(a)



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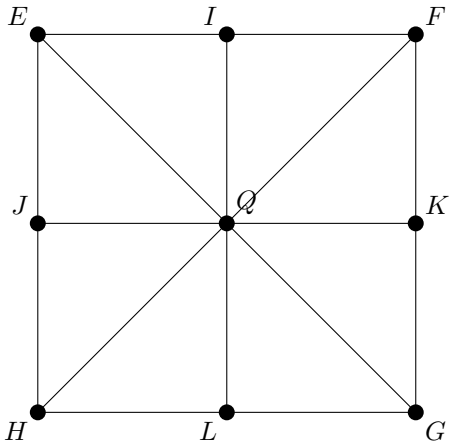
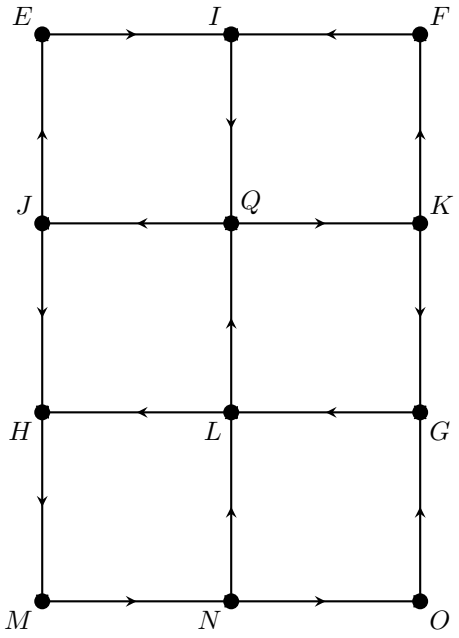
(b)



(c)



2. . Show that the Petersen graph, shown here, does not have a Hamilton circuit, but that the subgraph obtained by deleting a vertex v, and all edges incident with v, does have a Hamilton circuit.