

MATH 112 Discrete Mathematics.

Suggested Exercise set 11

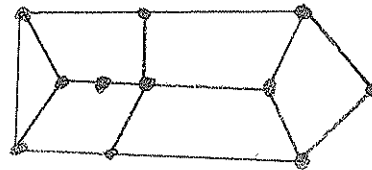
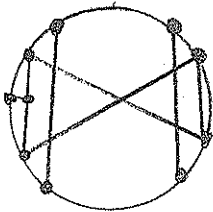
1. A connected loop-free undirected graph G has 14 vertices and 88 edges. Show that G has Hamilton cycle but do not have Euler circuit.

Problem 2. Let G be a loop-free undirected graph with at least three vertices.

a. If there is a Hamilton path between any two vertices of G show that G contains a Hamilton cycle.

b. If, at every vertex v in G , there is a Hamilton path which starts at v , need G contains a Hamilton cycle. (Hint: consider the Peterson graph).

Problem 3. Determine whether or not each of the graphs shown has Hamilton cycle



Problem 4. In a group of $2n$ people, each person has at least n friends. Prove that the group can be seated in a circle each person next to a friend.

Problem 5. Let $G = (V, E)$ be a loop-free undirected n -regular graph (all vertices have same degree n) with $|V| \geq 2n + 1$. Prove that the complement of G has a Hamilton cycle.