5-4. Three applications

Let $G$ be a graph that is connected in $S$. The degree of $G$ relative to this set is the number of edges with vertices being the endpoints and where two vertices are adjacent if the corresponding edges share a vertex in their neighborhood.

EXAMPLES

Recall: A graph is planar if it can be drawn in the plane with no edges crossing whereas a graph that is not planar is a nonplanar graph.

Let $G$ be a graph in $S$. Notation:

LEMMA If $G$ is a nontrivial graph with $n$ vertices then

THEOREM
LEMMA  If $G$ is a connected graph with minimum degree $\delta(G)$ then

(i) 
(ii) 

Proof 

A is a collection of at least 
fit together in so that 

(i) 
(ii) 

EXAMPLES 

A is a convex such that 

(i) 
(ii) 

THEOREM 

Proof Let $G$ be a 

Then 

(1) 
(2)
We consider THEOREM (Pick’s Theorem)