

Graph Theory 2, MATH 5450, Spring 2021

Homework 8, 10.1. Plane and Planar Graphs

Due Friday, April 2, at 1:40

Write in complete sentences!!! *Explain* what you are doing and convince me that you understand what you are doing and why. Justify all steps by quoting relevant results from the textbook, class notes, or hypotheses. Do not copy the work of others; **do your own work!!!**

10.1.1. (a) Show that every proper subgraph of $K_{3,3}$ is planar.

(b) Prove that $K_{3,3}$ is nonplanar using the Jordan Curve Theorem.

10.1.3. (a) Show that the Petersen graph contains a subdivision of $K_{3,3}$.

(b) Deduce that the Petersen graph is nonplanar.