Graph Theory 1, MATH 5340, Fall 2024

Homework 8, 2.5. Edge Cuts and Bonds, 2.6. Even Subgraphs, Solutions

Due Saturday, November 9, at 11:59 p.m.

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 discuss homework problems with others. If you have any questions, then contact me (gardnerr@etsu.edu). Use the same notation and terminology we used in class and given in the in-class hints.

2.5.1(c) Prove Theorem 2.14: A set of edges of a graph G is an edge cut if and only if it is a disjoint union of bonds.

2.6.4. **(a)** Prove that the cycles of a graph G generate the cycle space $\mathcal{C}(G)$.

(b) Prove the bonds of a graph G generate its bond space $\mathcal{B}(G)$.