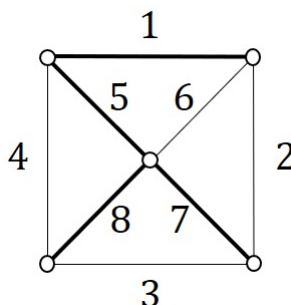# Graph Theory 2, MATH 5450, Spring 2021

Homework 3, 4.3. Fundamental Cycles and Bonds

Due Friday, February 12, 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!!!**

4.3.1. Determine the fundamental cycles and fundamental bonds of W_4 with respect to the spanning tree:

4.3.6. Let T be a spanning tree of a connected graph G. Prove that:

(a) (i) The fundamental cycles of G with respect to T form a basis of its cycle space.

(b) (i) Determine the dimensions of the cycle space of connected graph G.