

Name: \_\_\_\_\_

MATH 107

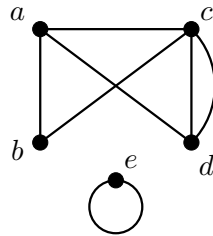
Winter 2022

HW 13: Due 01/13

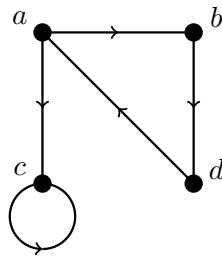
*"It has been said that geometry is the art of applying good reasoning to bad diagrams."*

*–Richard J. Trudeau*

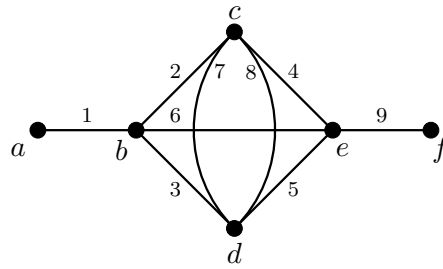
**Problem 1.** (10pt) Find the degrees of each vertex in the graph below and find the degree of the graph.



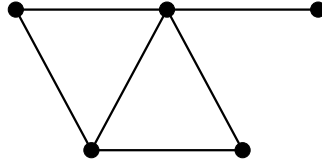
**Problem 2.** (10pt) Find the in- and out-degree of each vertex in the graph below:



**Problem 3.** (10pt) Does the graph below have an Euler circuit or an Euler trail? Explain. If it has either, find it.



**Problem 4.** (10pt) Explain why the graph below does not have a Hamiltonian circuit.



**Problem 5.** (10pt) Watch Numberphile's "[River Crossings \(and Alcuin Numbers\)](#)" on YouTube. Being as detailed as possible, comment on what you learned and how it relates to the course material.