Problem 1. Describe two possible applications of graphs, preferably in your area of interest.

Problem 2. Consider the graph below.

(a) Is it connected?
(b) How many components does it have?
(c) How many vertices and edges does it have?
(d) What is the degree (valence) of the vertex $A$?
(e) Find a (non-repeating) path from $B$ to $E$.
(f) Is $ABCADFA$ a cycle? A circuit?

Problem 3. Which two of the following four graphs are isomorphic to each other? What is different about the remaining two graphs?

Problem 4. Does each of the following graphs have an Euler circuit? If yes, number the edges in the order of their appearance in an Euler circuit. If no, explain why not.