This project asks you to practice with Euler and Hamilton circuits.

Give a connected graph with at least six vertices such that the graph

(a) has a single circuit that is *both* an Euler circuit and a Hamilton circuit. Give the circuit.

(b) has an Euler circuit and a Hamilton circuit, but the circuits have to be different. Give an example of each kind of circuit.

(c) has an Euler circuit but not a Hamilton circuit. Give an example of an Euler circuit and briefly explain why it can't have a Hamilton circuit.

(d) has a Hamilton circuit but not an Euler circuit. Give an example of a Hamilton circuit and briefly explain why it can't have an Euler circuit.

(e) has neither an Euler nor a Hamiltonian circuit. Briefly explain why it can't have either kind of circuit.