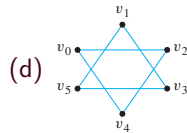
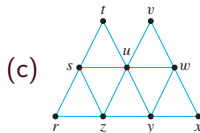
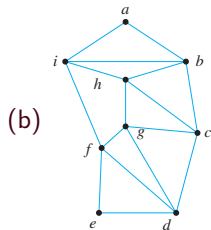
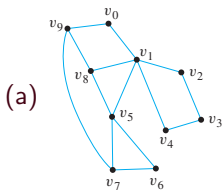


# Work on these with your partner(s) at the board

- In the Petersen graph, find
  - a trail of length 5
  - a path of length 9
  - cycles of length 5, 6, 8, and 9
- Prove that if  $G$  has an Euler circuit, then every vertex of  $G$  has even degree.
- For each graph, find an Euler circuit or explain why one does not exist.



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4. For each graph in #3, find an Hamiltonian circuit or explain why one does not exist.

5. For each graph, find an Hamiltonian circuit or explain why one does not exist.

