Concepts & Notation

• Sec. 3.1: vertex cut, $\kappa$, edge cut, $\kappa'$.

• Sec. 3.2: block, internally disjoint paths, Whitney’s theorem, Menger’s theorem

• Sec. 4.1: Eulerian cycle, Eulerian graph, Eulerian Characterization Theorem, Hamiltonian cycle, Dirac’s Theorem.

Classwork Problems

1. For the path graph $P_4$ (left) find a minimum vertex cut and $\kappa$.

2. For the cycle graph $C_6$ (middle) find a minimum vertex cut and $\kappa$.

3. For the graph $C_{2,2}$ (right) find a minimum vertex cut and $\kappa$. 
4. For the path graph $P_4$ (left) find a minimum edge cut and $\kappa'$.

5. For the cycle graph $C_6$ (middle) find a minimum edge cut and $\kappa'$.

6. For the graph $C_{2,2}$ (right) find a minimum edge cut and $\kappa'$.

7. Prove: For any graph $\kappa' \leq \delta$.

8. Find an example of a 3-regular graph with $\kappa' = 2$.

9. For the path graph $P_4$ (left) find its blocks.

10. For the graph $C_{2,2}$ (right) find its blocks.