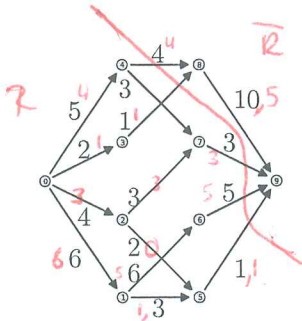
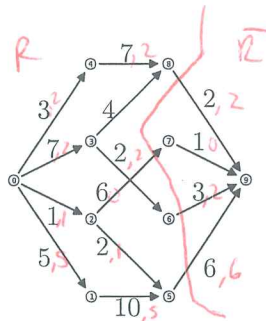


MATH 482, Spring 2013 - Homework 3
Assigned Monday 10/07. Due Wednesday 10/09.

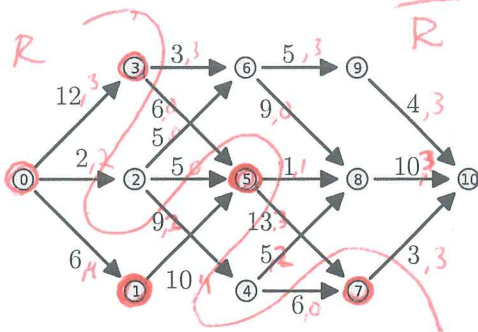
1. Find a maximum flow in the networks below. Use duality to prove optimality.



a. Value: 14

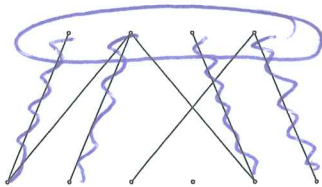


b. (Assigned!) Value: 12

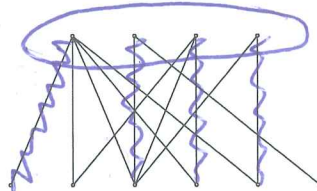


c. Value: 9

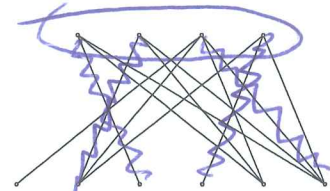
2. Find a maximum matching for each bipartite graph below. Use duality to show optimality.



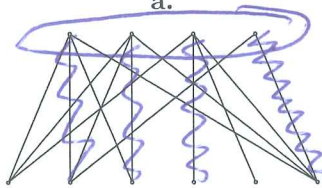
a.



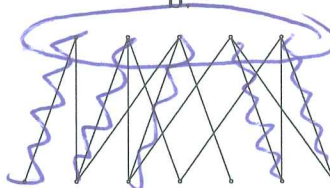
b.



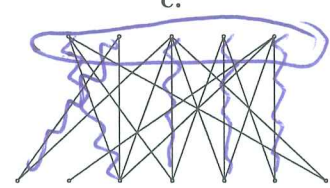
c.



d.



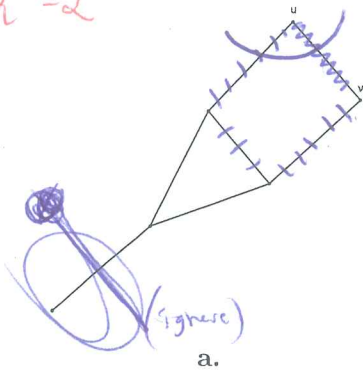
e. (Assigned!)



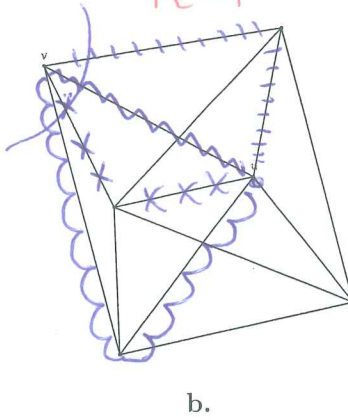
f.

4. Determine the (local) uv -edge-connectivity of the following undirected graphs. Use duality to show optimality. (Hint: Use Menger's Theorem.)

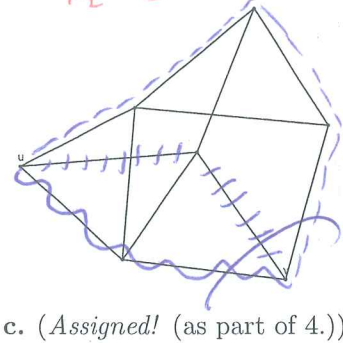
$\kappa' = 2$



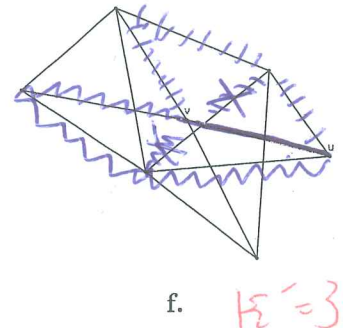
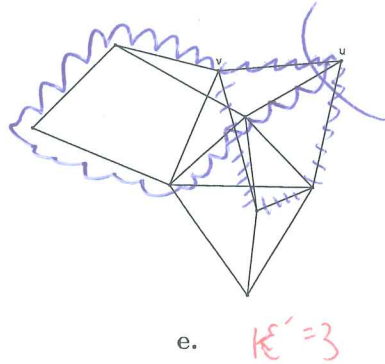
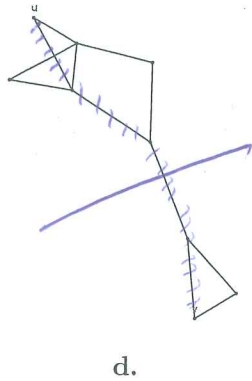
$\kappa' = 4$



$\kappa' = 3$



$\kappa' = 1$



5. Determine the global edge-connectivity of the above undirected graphs.

Will not be an exam.