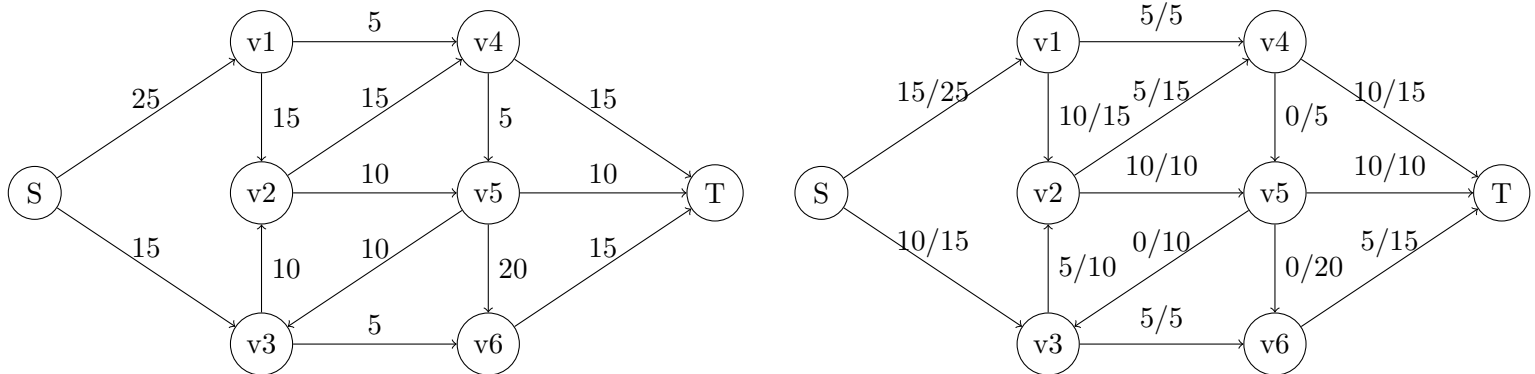


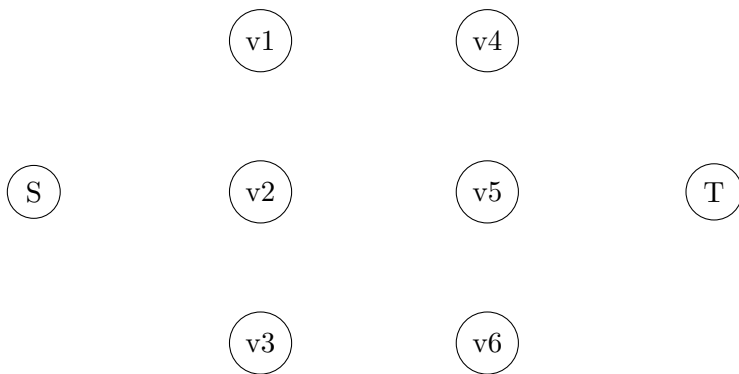
CSC 404 - ACTIVITY/PROJECT 13 - NAME:

Problem 1. Consider the following flow network, Give it a fun backstory :-), with current flow f :



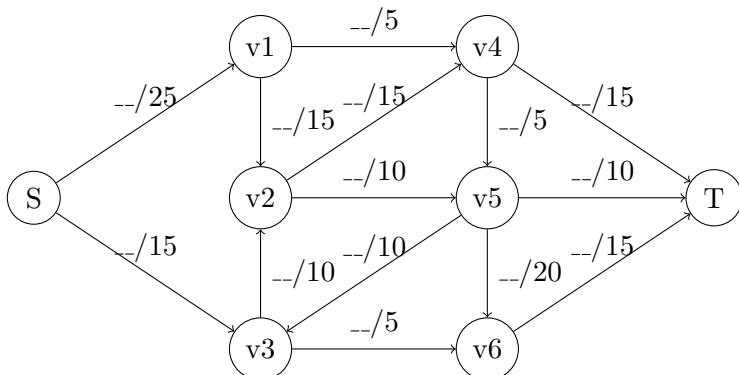
a. Show this is a valid flow. That is, confirm the in-flow = out-flow at all non source/sink locations.

b. Sketch out the resulting residual network

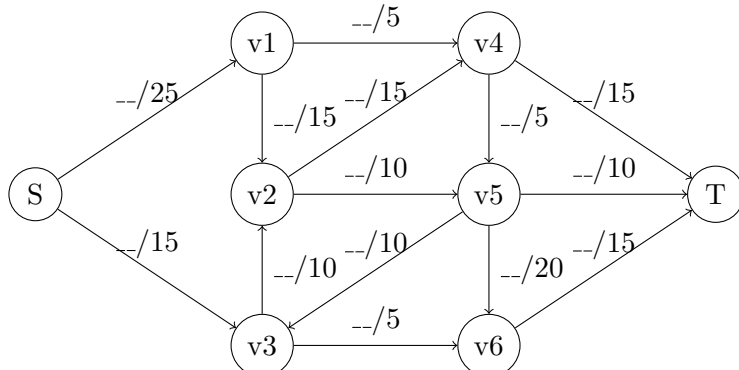
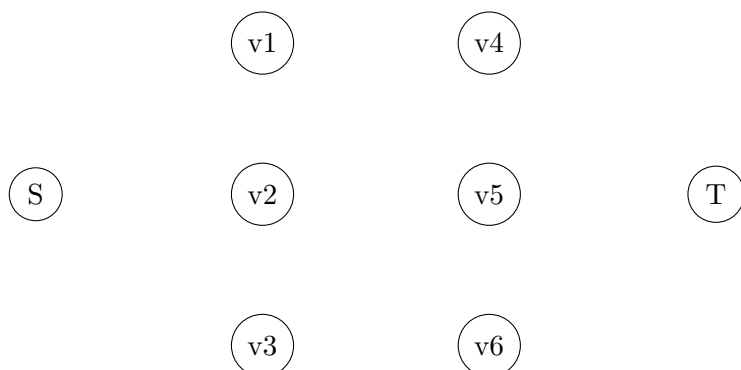
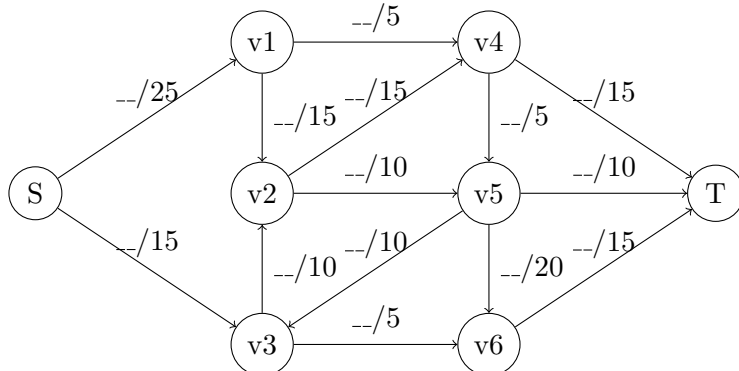
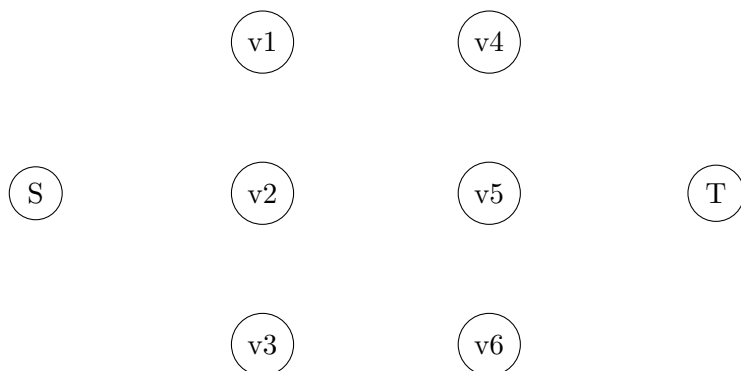
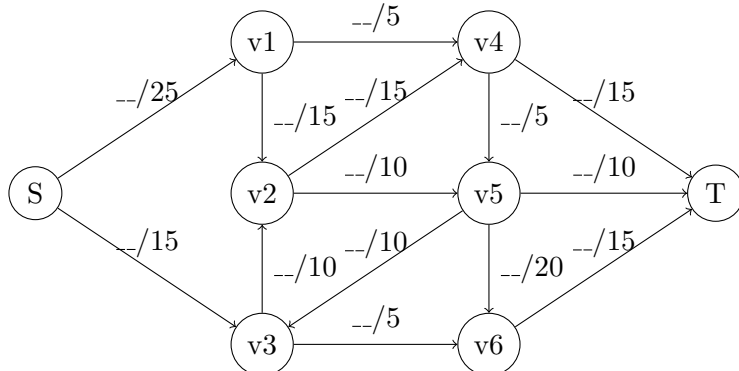
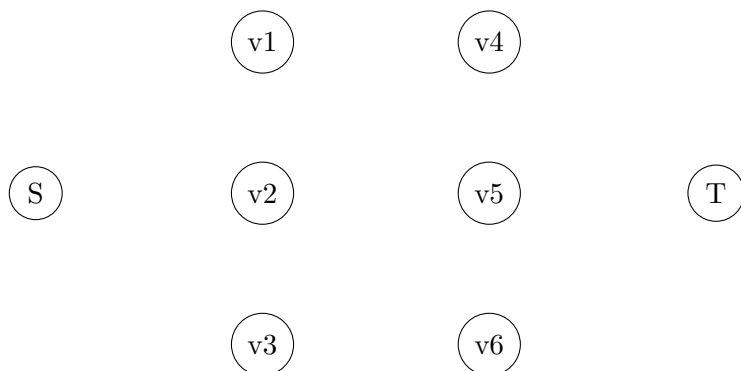
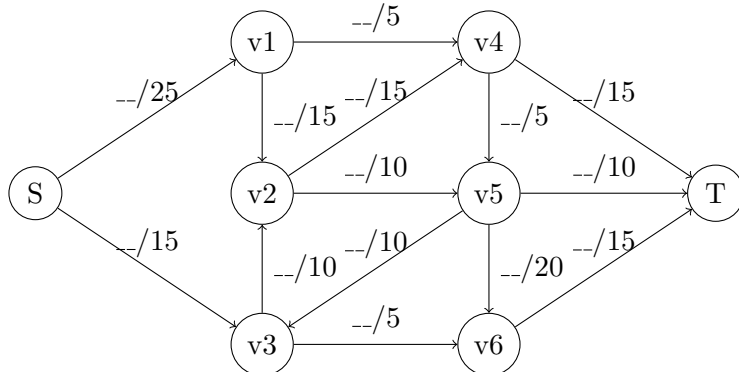
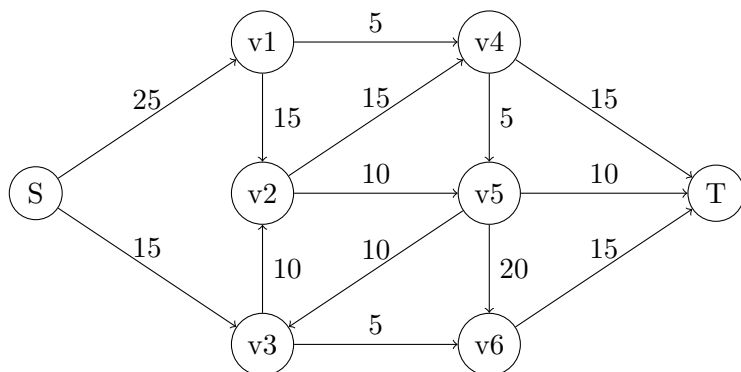


c. Within the residual network there (should) be a path $s \rightarrow v_1 \rightarrow v_2 \rightarrow v_4 \rightarrow v_5 \rightarrow v_6 \rightarrow t$. What is the value of additional resources (i.e., $|f'|$) we can carry along this flow, f' ?

d. Sketch out the resulting augmentation of flow f by f' .



Problem 2. Our goal in this problem is to run the full Ford-Fulkerson Algorithm. We start with a flow of zero and begin with the following residual network (top left network). At each step identify a path within the residual network, construct the augmentation of flow (use blank flow graphs on the right column), and construct the resulting residual network (use blank network in the left column). Keep this process going until you do not have path within the residual network.



Problem 3. Extra space if you need a few more blank graphs. Or...You can try running it again (consider different scenarios of how you went about selecting your path. Did you use a greedy approach, optimal approach, random approach,...)

