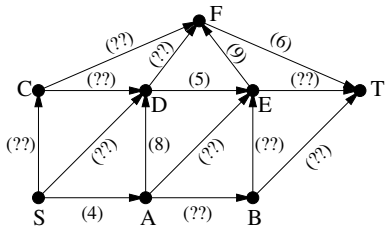
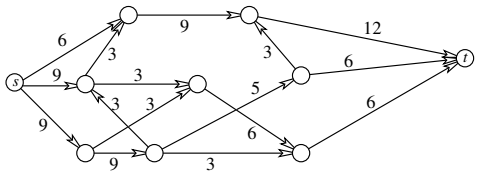
Exercise-set 9.

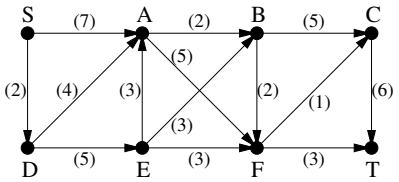
1. I just found a flow of value 15 in the network below when I spilled my coffee and the capacities of most of the edges became unreadable. Show that the flow I found was maximal.

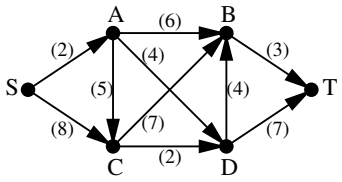


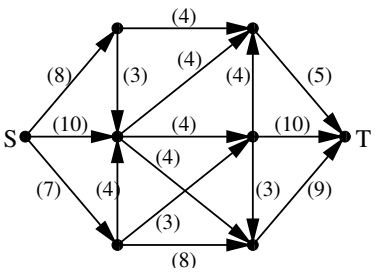
2. Is it true that in the network (G, s, t, c) in the picture below the maximum flow value is exactly 19? (The numbers on the edges denote the appropriate capacities.)

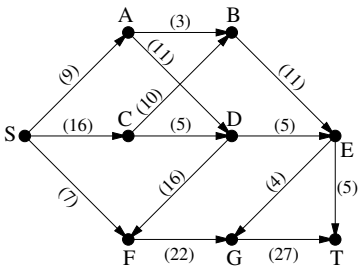


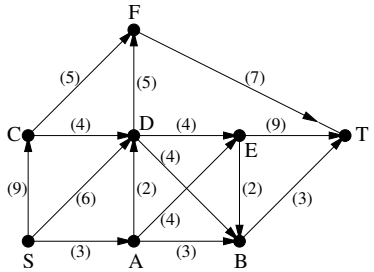
3. Determine the value of a maximum flow in the networks below, and prove that they are maximum.

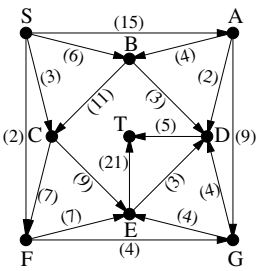


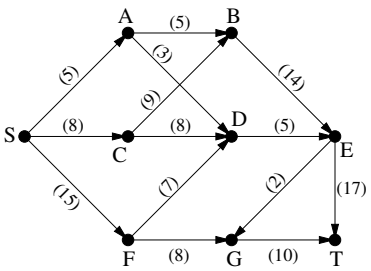


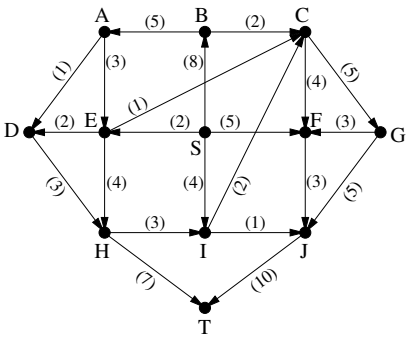


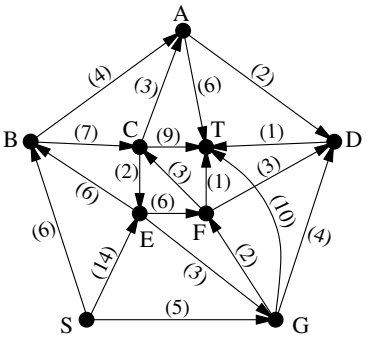




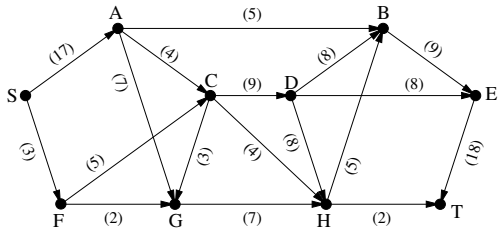




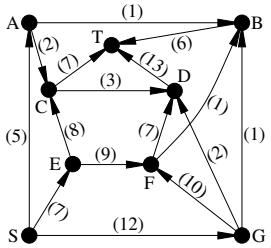


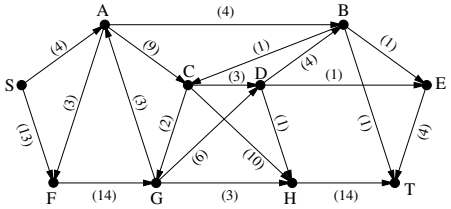


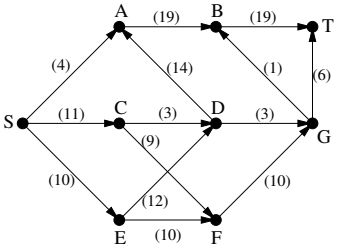
4. (MT++'12) Determine the capacity of the cut between S, A, G and the rest of the vertices in the network below and determine whether this cut is minimum or not (between S and T).



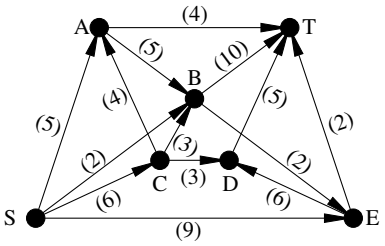
5. (MT'16, MT+'16, MT++'16) Determine a maximum flow and a minimum cut in the networks below.



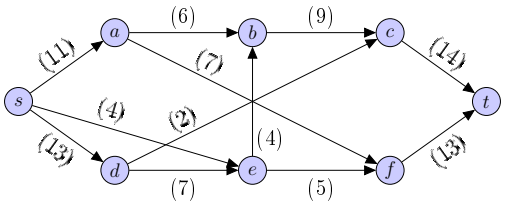




6. (MT'18) Determine a maximum flow in the network below (from S to T).



7. (MT+'18) Determine a maximum flow and a minimum s, t-cut in the network below.



8. (MT+'20) Determine a minimum cut in the network below.