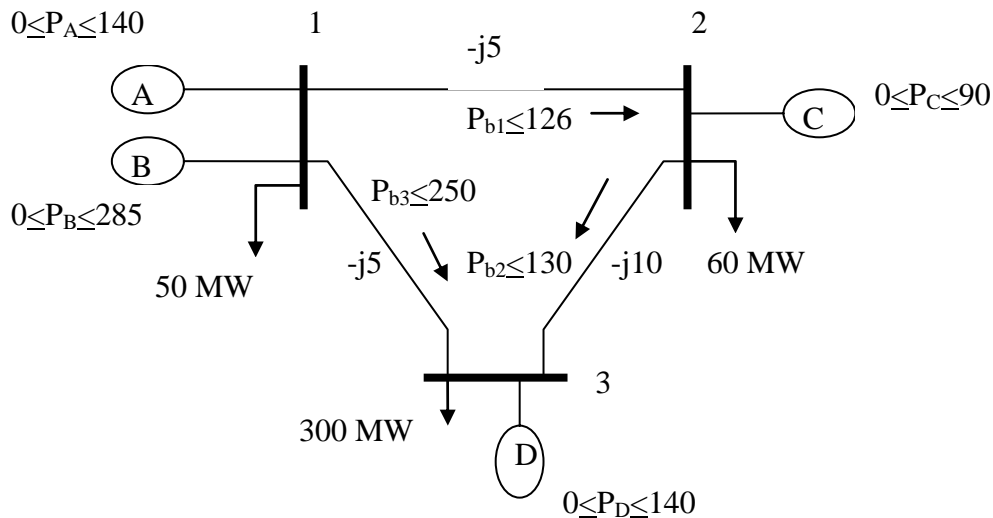


## HW #7, Due 3/31/08

1. Find the dispatch, flows, total cost, and all Lagrange multipliers for the system developed in class (see LPOPF2) corresponding to each of the following data (for each set of data, unless a data item is explicitly specified below, it is the same as in the “base case” that we identified in LPOPF2 notes). Explain any surprising results. You may use any solver you like (Matlab, CPLEX, or something else).
  - a.  $P_{B1,max}=0.01$
  - b.  $P_{B2,max}=0.08$
  - c.  $P_{B4,max}=0.40$
  - d.  $P_{B5,max}=0.40$
  
2. Set up a linear program in Matlab or CPLEX as done above to solve the linearized optimal power flow problem for the system and data shown below. There are 4 generators: A, B, C, and D. Line admittances given on the diagram ( $-j5$ ,  $-j5$ ,  $-j10$ ) are in per unit. Provide your Matlab or CPLEX code, the dispatch, flows, total cost, and all Lagrange multipliers.



The offers submitted from owners of units A, B, C, and D are 7.5, 6, 14, and 10, respectively, all in \$/MWhr.