53:134 Structural Design II, Spring 2005
Final Exam Part A

Assigned: 18 April 2005 **Due: 25 April 2005 (3:30PM)**

Design a light weight indeterminate truss shown in the following figure to satisfy LRFD Manual requirements. The truss has 4 nodes and 5 members and is subjected to a factored load of 600 kips. Use A992 steel wide flange sections in the design process (F_y = 50 ksi, E = 29000 ksi). Let the effective area for tension members be 75% of the gross area. For ease of fabrication, let members AD and BC have same section, and members AC and BD have same section.

Carry out at least two iterations of the design cycle. Report the total weight of the truss for your final design. You may use Excel or any other program in your work. If you make any assumptions, STATE THEM CLEARLY.