## Beam Deflection homework instructions

Name and date submitted (3 pts):

(6 problems, 100 points)

Instructions: Do the 5 problems directly on the handout, and do the 6th problem (steel girder) on separate paper. Staple everything together in a neat package and submit by the due date.

Complete problems 10.21 through 10.25 (5 problems) in the "beam deflection homework problems" handout posted near this assignment. Show all your work. Then, using the "Steel I-Beam properties" handout (also posted nearby), predict the maximum deflection in inches of a steel girder W36x361 which you intend to use for a bridge spanning 100-ft over a river. You can model your bridge as needing to carry a 20,000-lb point load centered over each steel girder. (Your bridge will use several steel girders; you're only analyzing one of them right now). Assume A36 steel with 'E' of 29,000,000 psi. Use the 'I' value listed for the "X-X axis" (the upright orientation of the beam). Also give the overall height ('d') and width ('bf') of the girder in inches.