CIV100 – MECHANICS – SECTION 5

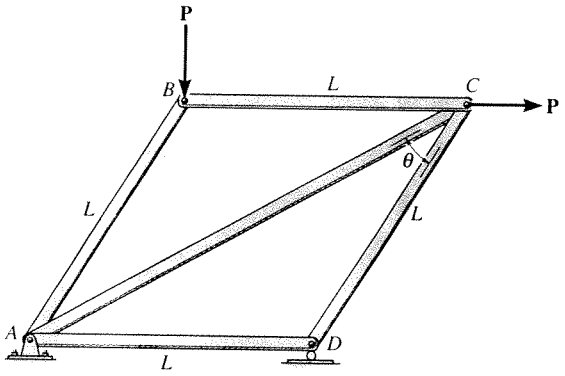
Assignment No. 5 – Thursday, October 17, 2013

Due: 10:10 a.m., Monday*, October 21, 2013, stapled and on correct "engineering paper".

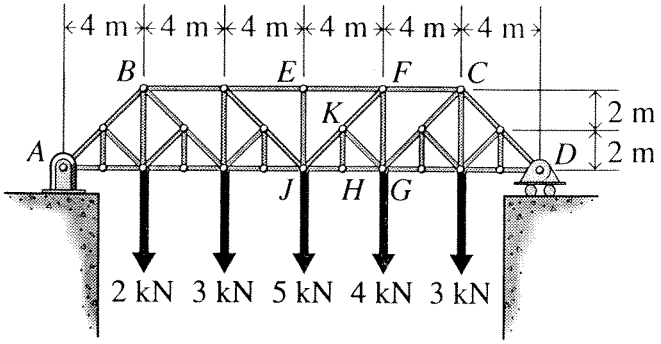
***Topics:* Trusses & Distributed Loads** ***Reminder:* MidTerm Exam at Noon on Tuesday*, October 22**

---

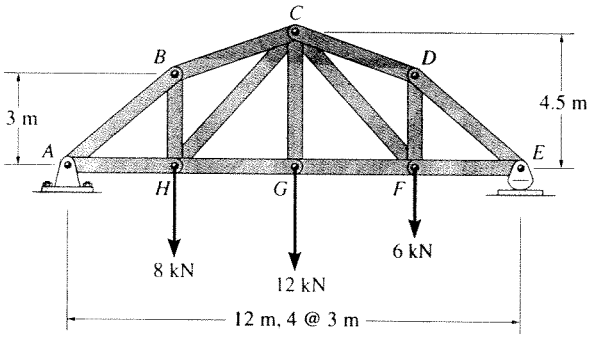
1. The maximum allowable tensile force in the members of the truss is $(F_t)_{max} = 2$ kN and the maximum allowable compressive force is $(F_c)_{max} = 1.2$ kN. Determine the maximum magnitude P of the two loads that can be applied to the truss if $L = 2$ m and $\theta = 30°$.



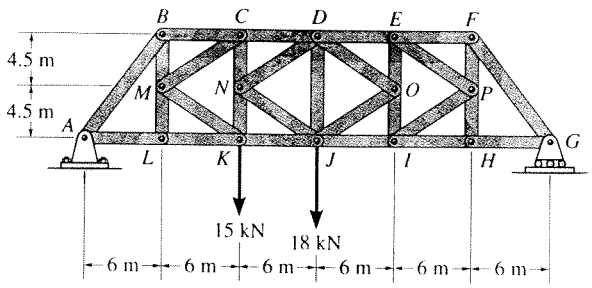
2. Use the method of sections to find the forces in members *EF*, *JK* and *HJ* of the "Baltimore" truss shown.



3. Determine the forces in members *HG*, *HC* and *BC* of the truss by using a single equation of equilibrium for the calculation of each unknown force.



4. Determine the force in members *CD* and *KJ* of the "K" truss shown.



5. The member shown is supported by a vertical cable AD and rollers at both locations C and B. For the given loading, the system is in equilibrium.

(a) Draw a separate Free Body Diagram of the entire body showing all forces.

(b) Determine the reaction forces at C and B, and the tension in the cable AD.