

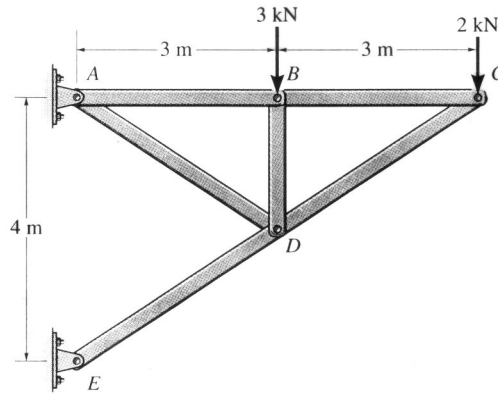
CIV100F – MECHANICS ONLINE

Assignment No. 6

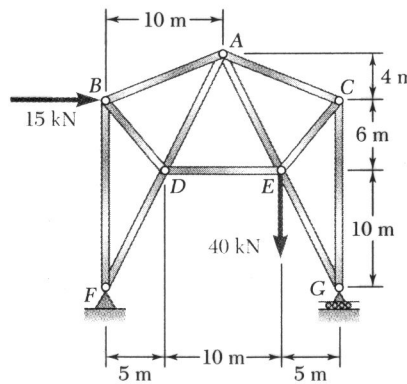
Due: As indicated in Quercus

Material Covered: Textbook – Chapter 6 and Complementary Notes

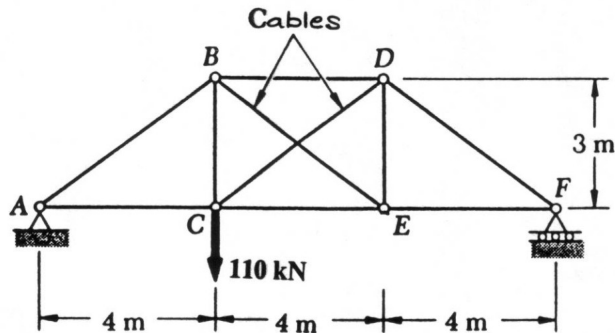
1. Determine the force in each member of the truss using the method of joints and state if the members are in tension or compression.



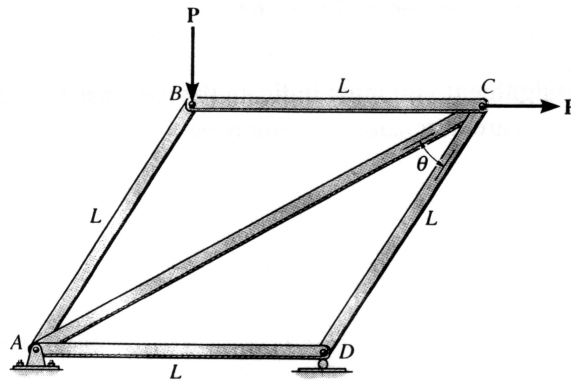
2. Determine the force in each member of the truss shown by the method of joints. State whether each member is in tension or compression.



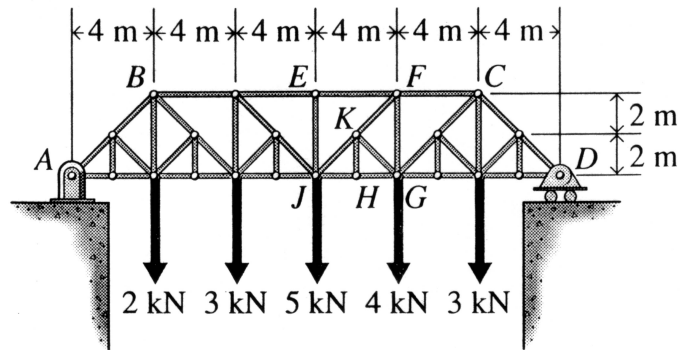
3. The diagonal members *BE* and *CD* of the pin-jointed truss shown are cables, i.e. they can only sustain tension forces (and they go slack, and hence take zero force, if subjected to compression). Determine the forces in members *BD*, *CE*, *CD* and *BE*.



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



5. Use the method of sections to find the forces in members EF , JK and HJ of the “Baltimore” truss shown.



6. Determine the forces in members HG , HC and BC of the truss shown, by writing a single equation of equilibrium for the calculation of each unknown force, which does not include the other two member forces required.

