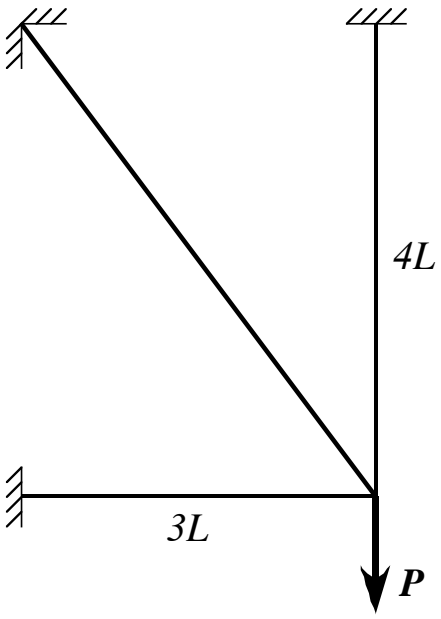
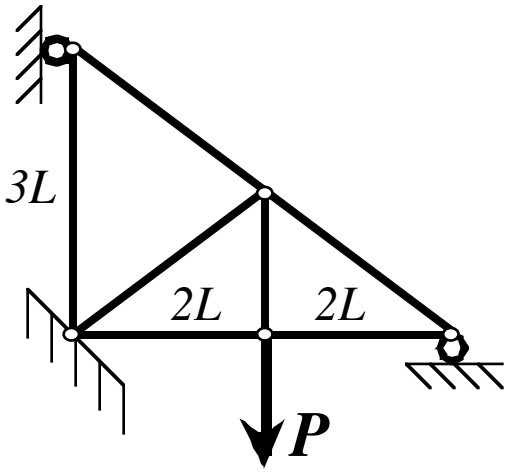
COE 321 Homework #1

1. Determine the support reactions and all of the internal forces in the struts for the following structure. All struts are weightless and pin-ended. The lengths of the vertical and horizontal struts are shown. All struts have Young's modulus E and cross-sectional area A.





2. Determine the support reactions and all of the internal forces in the struts for the following structure. All struts are weightless and pin-ended. The lengths of the vertical and horizontal struts are shown. All struts have Young's modulus E and cross-sectional area A.

3. Determine the result of the operation $\mathbf{A}^{-1} \cdot \mathbf{B}$, where,

$$\mathbf{A} = \begin{bmatrix} 3 & -1 & -2 \\ -1 & 5 & -1 \\ -2 & -1 & 4 \end{bmatrix} \text{ and } \mathbf{B} = \begin{pmatrix} -2 \\ 4 \\ -3 \end{pmatrix}$$

You may use a calculator to do arithmetic, but do not use any type of *Inverse* or *dot product* functions on your calculator or computer.