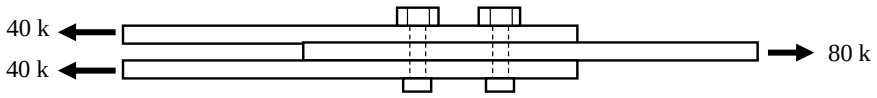
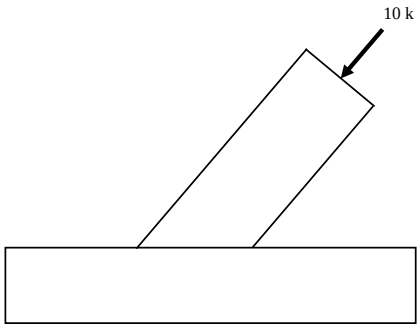
1. A. Identify the different types of stress present in civil and mechanical bodies.
   B. Describe or draw the loads that would cause these different types of stresses in **a simply-supported beam.** Where do you expect the maximum stresses to occur (both along the length and within the cross-section)?

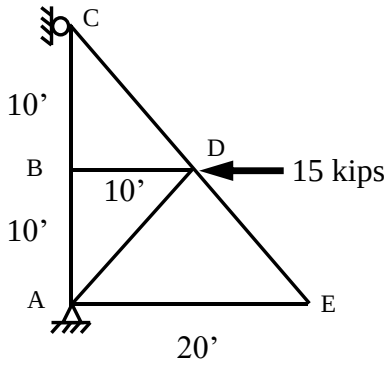
2. Identify the different types of stress present in each component of the figures below. Where do you anticipate failure occurring? Why?



   Two timber members are glued where they intersect below:



3. If the allowable normal stress in member AD below is 18 ksi, what is the minimum member area required?



4. Assume there are steel pins (pictured below) at supports A and C in problem 3 that should be designed with a factor of safety of 1.4. The failure shear stress is 12 ksi. Determine to the nearest ¼ in the required diameters for the steel pins.