1) The linkage is made using two A-36 steel rods, each having a circular cross section. Determine the diameter of each rod to the nearest \( \frac{1}{8} \) in. that will support the 900-lb load. Assume that the rods are pin connected at their ends. Use a factor of safety with respect to buckling of F.S. = 1.8.

\[ E = 29 \times 10^6 \text{ psi} \]

\[ \sigma_y = 36 \text{ ksi} \]
2) The bell crank is pinned at $A$ and supported by a short link $BC$. If it is subjected to the force of 80 N, determine the principal stresses at (a) point $D$ and (b) point $E$. The crank is constructed from an aluminum plate having a thickness of 20 mm.