Homework Problem H30.A

Given: Consider the frame shown below made up of a rigid bar AB and a circular cross-section rod BC, where the rod has a diameter of d and is made up of a material having a Young's modulus E.

Find: For this problem:

   a) Determine the load carried by rod BC.

   b) Determine the axial stress and strain in rod BC.

For this problem, use the following parameters: $b = 2$ ft, $d = 2$ in, $P = 3$ kips and $E = 30 \times 10^6$ psi.