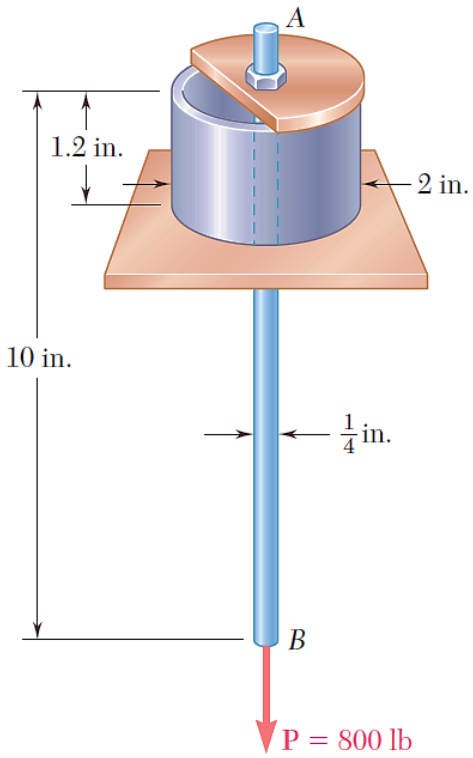
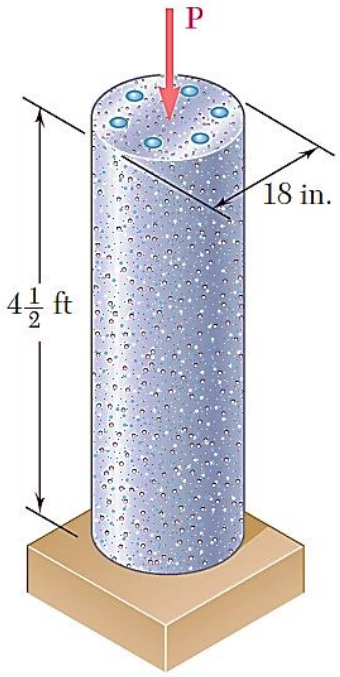
1) GIVEN: A 4.8ft long steel wire with ∅0.25in is subjected to a 750-lb tensile load. ($E_s = 29x10^6$ psi)
REQ'D: (a) Elongation of the wire.
(b) Corresponding normal stress. (B9.1)

2) GIVEN: For electrical insulation a ∅.25 steel hanger is supported by a rigid circular plate (shown cutaway) resting on a 1/8in wall thickness polystyrene tube. ($E_{poly} = .45x10^6$ psi)
REQ'D: (a) Elongation of rod *AB*
(b) Deflection of point *B*
(c) Normal stress in rod *AB*. (B9.17)



3) GIVEN: The concrete column is reinforced with six ∅1-1/8in. steel rods.
$E_s = 29x10^6$ psi and $E_c = 4.2x10^6$ psi.
REQ'D: Normal stresses in the steel and concrete if P = 350 kips. (B9.27)



4) GIVEN: ∅60mm bolts used to secure the top on a nuclear reactor vessel.
REQ'D: Tension in bolts when Δ∅ is 13μm. E =200 GPa and ν = 0.29
(B9.52)