1-14. A normally distributed force $P \sim N(10,1^2)$ kN is applied to rigid beam AB which is supported by bars AC and BD as shown. Support bars AC and BD have a maximum deformation $\delta_{max} = 2$ mm. AC has a diameter $d = 50$ mm and modulus of elasticity $E = 450$ MPa. Support bar BD has a diameter $d = 25$ mm and modulus of elasticity $E = 1500$ MPa. What is the probability of failure of each bar? (**Ans.** $p_{f_{AC}} = 1.5428(10^{-3})$, $p_{f_{BD}} = 1.5428(10^{-3})$)