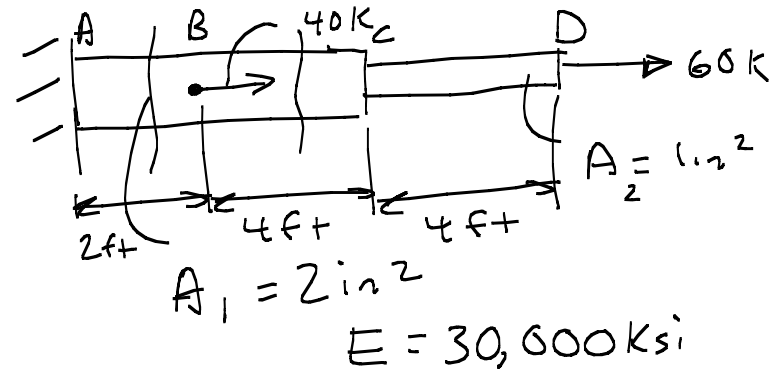


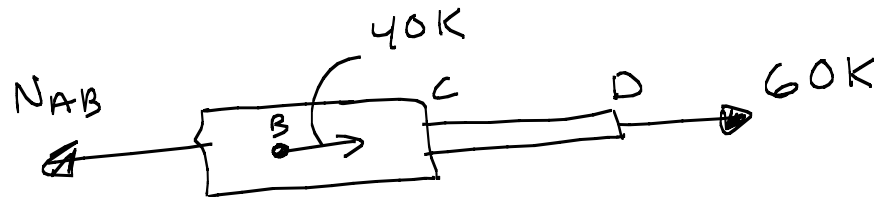
Problem 3

Determine: The Total Elongation

3 segments

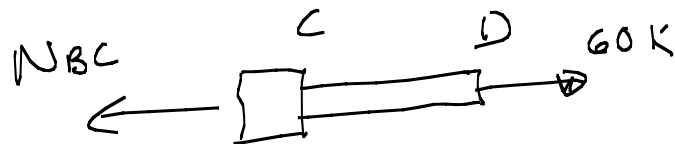


AB



$$N_{AB} = 100 \text{ K}$$

BC



$$N_{BC} = 60 \text{ K}$$

CD

$$N_{CD} = N_{BC} = 60 \text{ K}$$

$$\delta_{AD} = \frac{(100 \text{ K}) \left(2 \text{ ft} + \frac{12 \text{ in}}{\text{ft}} \right)}{(30,000 \text{ ksi}) (2 \text{ in}^2)} + \frac{(60 \text{ K}) (4 \text{ ft} + 12)}{(30,000 \text{ ksi}) (2 \text{ in}^2)} + \frac{(60 \text{ K}) (4 \text{ ft} + 12)}{(30,000 \text{ ksi}) (1 \text{ in}^2)}$$

$$\boxed{\delta_{AD} = 0.184 \text{ in}}$$