1. The rigid body $EFG$ is supported by the truss system shown. Knowing that all truss members are circular rods of 0.75-in. diameter and the normal stress developed in member $BC$ is $\sigma_{BC} = 15$ ksi, determine (a) the magnitude $P$ of the applied load at $F$, (b) the normal stress $\sigma_{CG}$ in member $CG$.  

2. Define (a) shearing stress, (b) factor of safety. 

3. You have been advised to learn your basics in mechanics from two teachers. Who are they?

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1. 

![Diagram](image)

\[ F_{BC} = \sigma_{BC} A_{BC} = 15\pi (0.75/2)^2 \text{ kips} \]

\[ = 6.626797 \text{ kips} \]

\[ + \sum M_E = 0: \quad 6F_{BC} - 8P = 0 \]

\[ P = 4.9701 \quad P = 4.97 \text{ kips} \]

\[ \pm \sum F_x = 0: \quad (4/5)F_{CG} - F_{BC} = 0 \]

\[ F_{CG} = 8.283496 \text{ kips} \]

\[ \sigma_{CG} = \frac{F_{CG}}{\pi (0.75/2)^2} \quad \sigma_{CG} = 18.75 \text{ ksi} \]