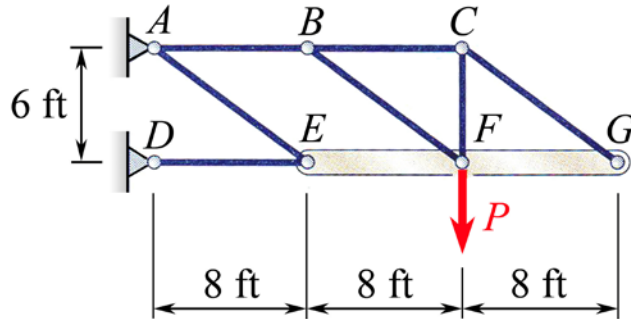


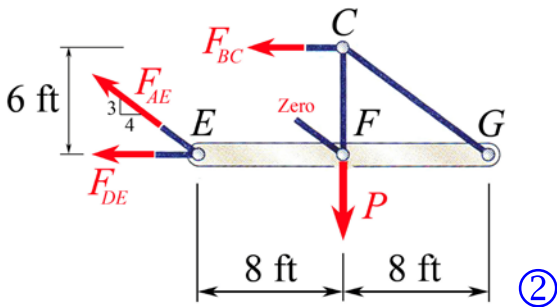
MEEG 3013 Quiz #1.m03.101

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  $CG$ . ⑦



2. Define (a) shearing stress, (b) factor of safety. ②
3. You have been advised to learn your basics in mechanics from *two teachers*. Who are they? ①
- 

1.



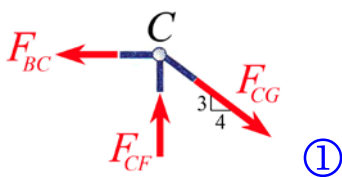
$$F_{BC} = \sigma_{BC} A_{BC} = 15\pi(0.75/2)^2 \text{ kips} = 6.626797 \text{ kips}$$

$$+\circlearrowleft \sum M_E = 0: 6F_{BC} - 8P = 0$$

$$P = 4.9701 \quad P = 4.97 \text{ kips} \quad \text{②}$$

$$\pm \rightarrow \sum F_x = 0: (4/5)F_{CG} - F_{BC} = 0$$

$$F_{CG} = 8.283496 \text{ kips} \quad \text{①}$$



$$\sigma_{CG} = \frac{F_{CG}}{\pi(0.75/2)^2} \quad \sigma_{CG} = 18.75 \text{ ksi} \quad \text{①}$$