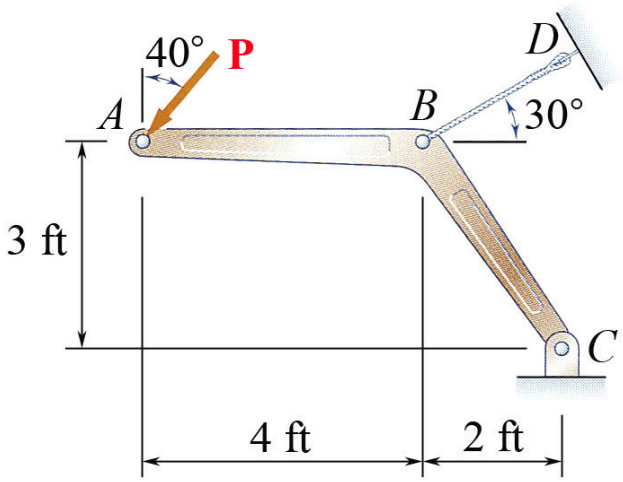
MEEG 3013 Quiz #1.m03.103

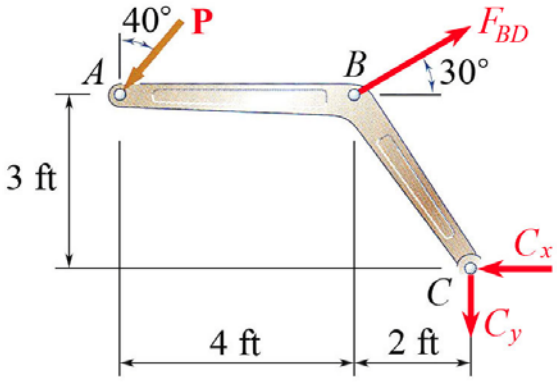
1. The member *ABC* is supported by a hinge at *C* and a cable *BD*, as shown, where the ultimate load for the cable is 4 kips. Determine (*a*) the allowable magnitude of the load **P** if the desired factor of safety for the cable is 3.5, (*b*) the reaction force **C** at *C*. ⑦



2. Define (*a*) normal stress, (*b*) shearing stress. ②

3. In the guides to learning mechanics, you are advised to learn the basics from *two teachers*. Who are they? ①

1.



②

$$+\circlearrowleft \Sigma M_C = 0: \quad 3P\sin 40° + 6P\cos 40° - 3F_{BD}\cos 30° - 2F_{BD}\sin 30° = 0 \quad ①$$

$$3.5 = \frac{4000}{F_{BD}} \quad ① \qquad F_{BD} = 1142.857 \text{ lb} \qquad P = 630.2407 \text{ lb}$$

$P = 630$ lb ① $\quad$ $\mathbf{C} = -585\mathbf{i} - 88.6\mathbf{j}$ lb ②