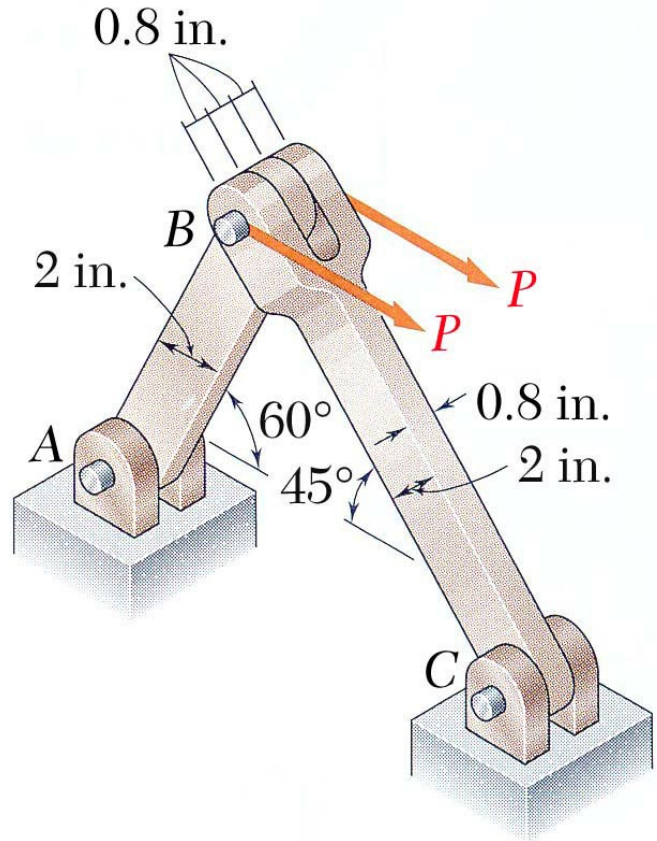
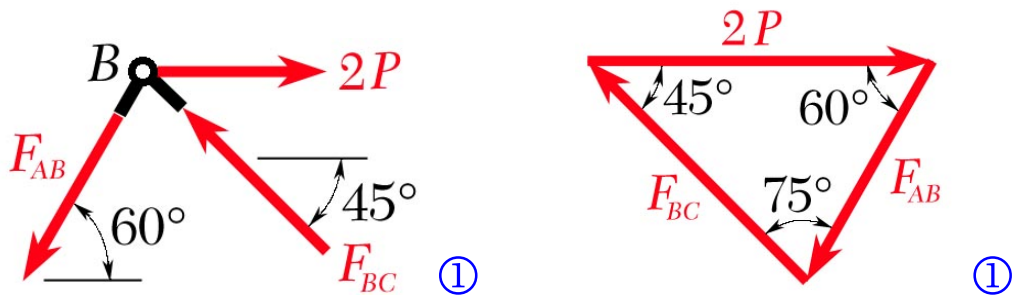


MEEG 3013 Quiz #1.m04.091

- Define (a) shearing force, (b) shearing stress. ②
- Two horizontal forces, each of magnitude P , are applied to pin B of the assembly shown. Knowing that a pin of 0.7-in. diameter is used at each connection and the maximum average stress in link AB is +15 ksi, determine (a) the magnitude of P , (b) the maximum average normal stress in link BC . ⑧



2.



$$\frac{2P}{\sin 75^\circ} = \frac{F_{AB}}{\sin 45^\circ} = \frac{F_{BC}}{\sin 60^\circ} \quad F_{AB} = 1.4641016P \quad F_{BC} = 1.79315P$$

$$15 = \frac{1.4641016P}{(2 - 0.7)(0.8)} \quad P = 10.654998 \quad P = 10.65 \text{ kips}$$

$$\sigma_{BC} = -\frac{1.79315P}{2(0.8)} = -11.941 \quad \sigma_{BC} = -11.94 \text{ ksi}$$