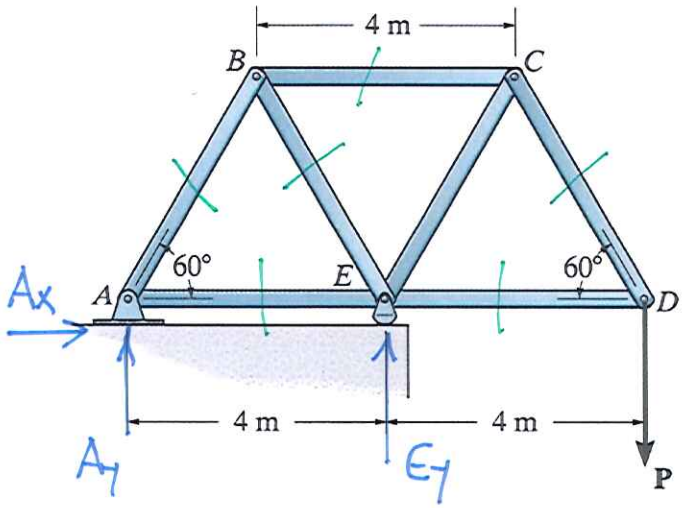
**Example 3b-2**. Determine all the forces in the following truss.

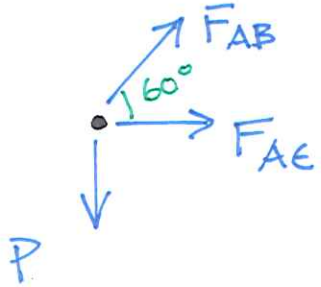



$$\overset{+}{\circlearrowleft}\sum M_A = 0 = -P(8m) + E_y(4m) \qquad E_y = 2P$$

$$+\uparrow \sum F_y = 0 = A_y + E_y - P \qquad A_y = -P$$

$$\overset{+}{\rightarrow} \sum F_x = 0 = A_x$$

## JOINT A



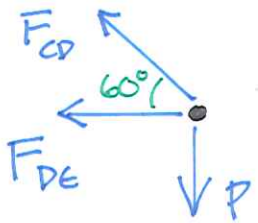

$$+\uparrow \sum F_y = 0 = F_{AB}\sin 60° - P$$

$$F_{AB} = 1.15P$$

$$\overset{+}{\rightarrow} \sum F_x = 0 = F_{AE} + F_{AB}\cos 60°$$

$$F_{AE} = -0.575P$$

## JOINT D



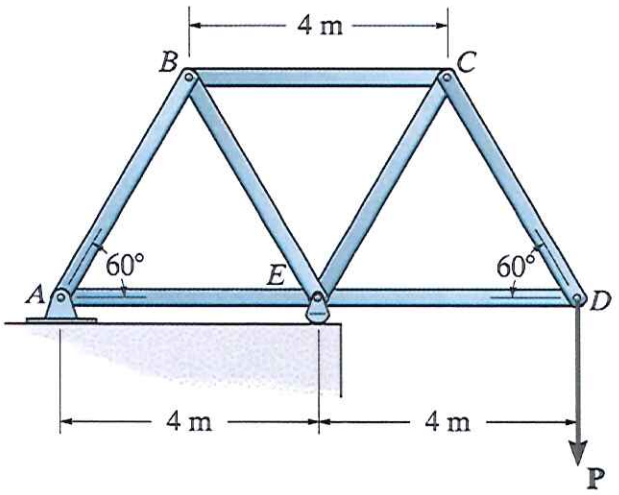

$$+\uparrow \sum F_y = 0 = F_{CD}\sin 60° - P$$

$$F_{CD} = 1.15P$$

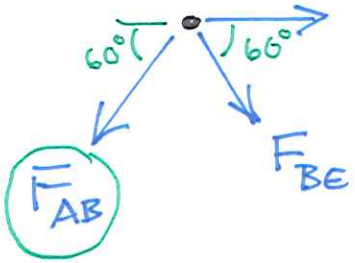
$$\overset{+}{\rightarrow} \sum F_x = 0 = -F_{DE} - F_{CD}\cos 60°$$

$$F_{DE} = -0.575P$$

**Example 3b-2.** Determine all the forces in the following truss.




## JOINT B



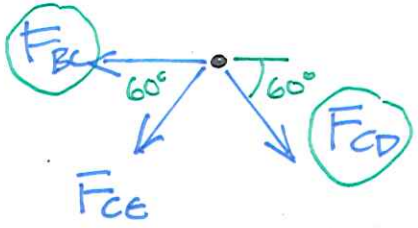

$$+\uparrow \Sigma F_y = 0 = -F_{AB}\sin 60^\circ - F_{BE}\sin 60^\circ$$

$$F_{BE} = -F_{AB} = -1.15P$$

$$\xrightarrow{+} \Sigma F_x = 0 = F_{BC} + F_{BE}\cos 60^\circ - F_{AB}\cos 60^\circ$$

$$F_{BC} = 1.15P$$

## JOINT C




$$+\uparrow \Sigma F_y = 0 = -F_{CE}\sin 60^\circ - F_{CD}\sin 60^\circ$$

$$F_{CE} = -F_{CD} = -1.15P$$