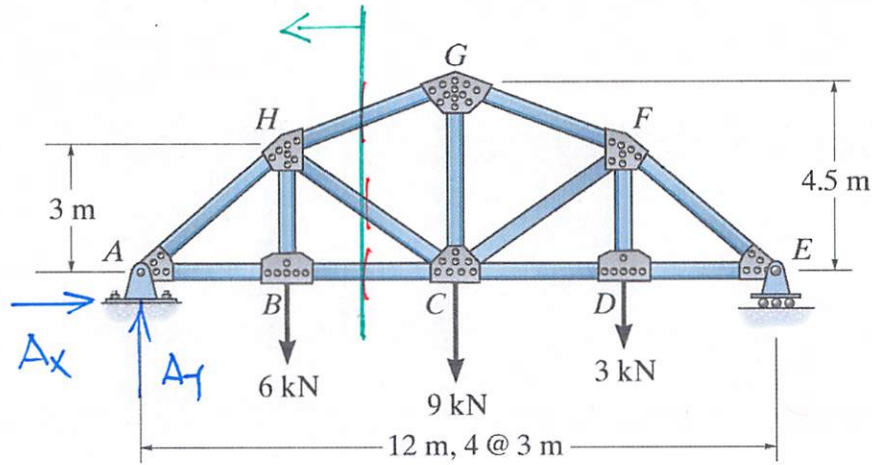


Problem 3c-4: Determine the forces in members GH, HC, and BC.



$$\begin{aligned} \sum M_E = 0 &= 3 \text{ kN}(3 \text{ m}) + 9 \text{ kN}(6 \text{ m}) + 6 \text{ kN}(9 \text{ m}) \\ &\quad - A_y(12 \text{ m}) \\ A_y &= 9.75 \text{ kN} \end{aligned}$$

$$\sum F_x = 0 = A_x$$

$$\begin{aligned} \sum M_C = 0 &= -\frac{2}{\sqrt{5}} F_{GH}(4.5 \text{ m}) + 6 \text{ kN}(3 \text{ m}) - 9.75 \text{ kN}(6 \text{ m}) \\ F_{GH} &= -10.06 \text{ kN} \end{aligned}$$

$$\begin{aligned} \sum M_H = 0 &= +F_{BC}(3 \text{ m}) - 9.75 \text{ kN}(3 \text{ m}) \\ F_{BC} &= 9.75 \text{ kN} \end{aligned}$$

$$\begin{aligned} \sum F_x = 0 &= F_{BC} + \frac{1}{\sqrt{2}} F_{CH} + \frac{2}{\sqrt{5}} F_{GH} \\ F_{CH} &= -1.06 \text{ kN} \end{aligned}$$

