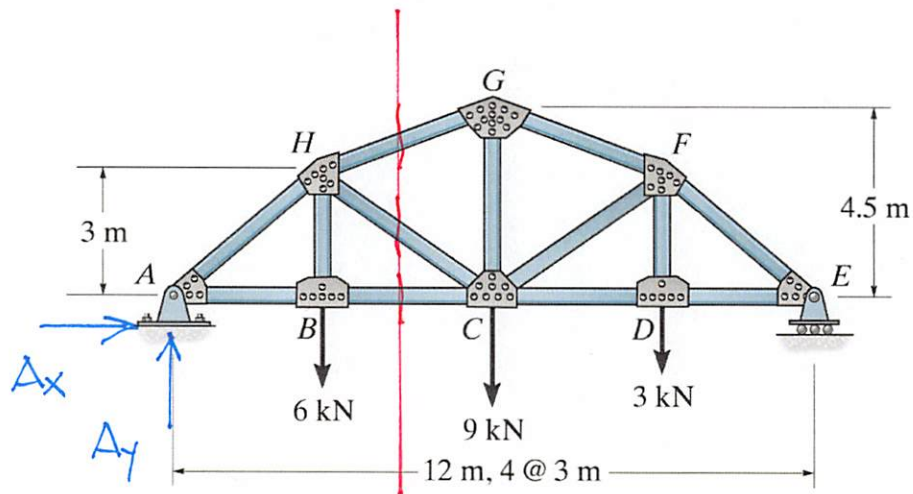


Problem 3c-4: Determine the forces in members GH, HC, and BC.



$$\sum \overset{\curvearrowright}{M}_E = 0 = 3 \text{ kN}(3 \text{ m}) + 9 \text{ kN}(6 \text{ m}) + 6 \text{ kN}(9 \text{ m}) - A_y(12 \text{ m})$$

$$\underline{A_y = 9.75 \text{ kN}}$$

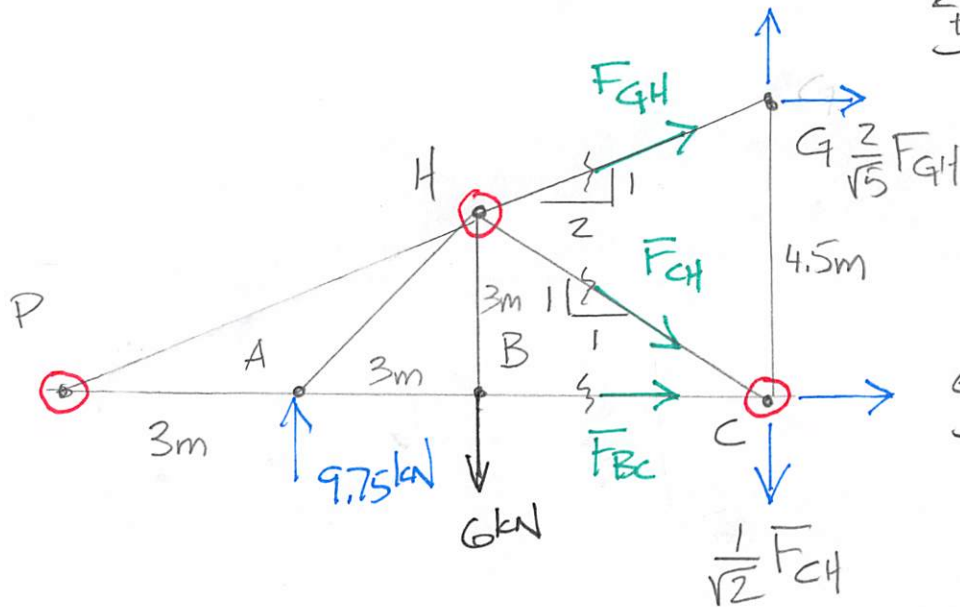
$$\sum \vec{F}_x = 0 = A_x$$

$$\sum \overset{\curvearrowright}{M}_C = 0 = -\frac{2}{\sqrt{5}} F_{GH}(4.5 \text{ m}) + 6 \text{ kN}(3 \text{ m}) - 9.75 \text{ kN}(6 \text{ m})$$

$$\underline{\underline{F_{GH} = -10.06 \text{ kN}}}$$

$$\sum \overset{\curvearrowright}{M}_H = 0 = F_{BC}(3 \text{ m}) - 9.75 \text{ kN}(3 \text{ m})$$

$$\underline{\underline{F_{BC} = 9.75 \text{ kN}}}$$



$$\sum \vec{F}_x = 0$$

$$= F_{BC} + \frac{1}{\sqrt{2}} F_{CH} + \frac{2}{\sqrt{5}} F_{GH}$$

$$\underline{\underline{F_{CH} = -1.06 \text{ kN}}}$$

$$\sum \overset{\curvearrowright}{M}_P = 0 = -\frac{1}{\sqrt{2}} F_{CH}(9 \text{ m}) - 6 \text{ kN}(6 \text{ m}) + 9.75 \text{ kN}(3 \text{ m})$$

$$\underline{\underline{F_{CH} = -1.06 \text{ kN}}}$$