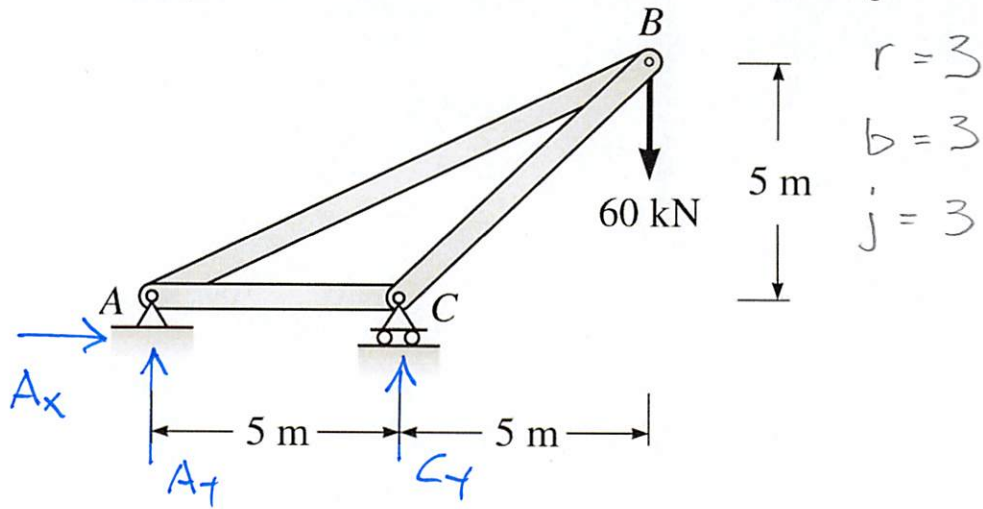


Example 3b-1. Determine all the forces in the following truss.

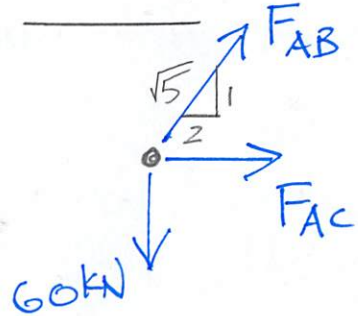


$$\begin{aligned} \sum M_A = 0 &= -60 \text{ kN}(10 \text{ m}) + C_y(5 \text{ m}) \\ C_y &= 120 \text{ kN} \\ \sum F_y = 0 &= A_y + C_y - 60 \text{ kN} \\ A_y &= -60 \text{ kN} \end{aligned}$$

$$\sum F_x = 0 = A_x$$

METHOD OF JOINTS

JOINT A



$$\sum F_y = 0$$

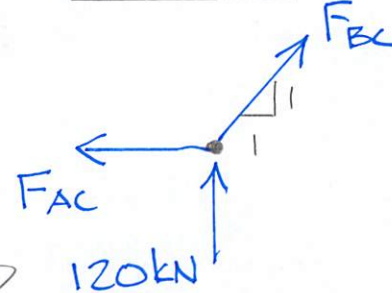
$$\frac{1}{\sqrt{5}} F_{AB} - 60 \text{ kN}$$

$$F_{AB} = 134.2 \text{ kN}$$

$$\sum F_x = 0 = F_{AC} + \frac{2}{\sqrt{5}} F_{AB}$$

$$F_{AC} = -120 \text{ kN}$$

JOINT C



$$\sum F_y = 0$$

$$= \frac{1}{\sqrt{2}} F_{BC} + 120 \text{ kN}$$

$$F_{BC} = -169.7 \text{ kN}$$