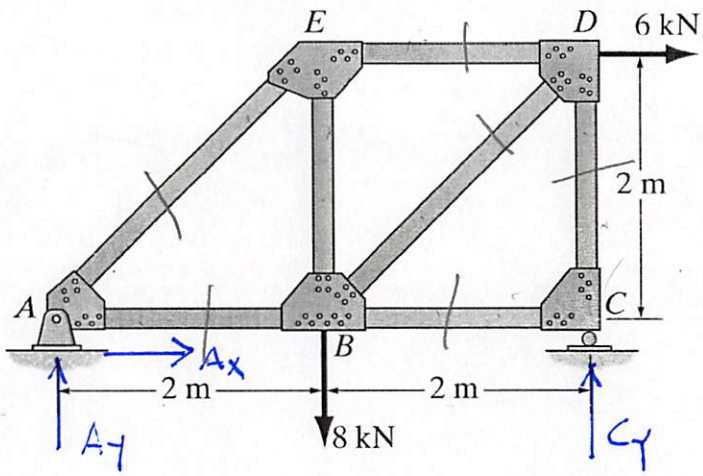
Example 3b-4. Determine all the forces in the following truss.



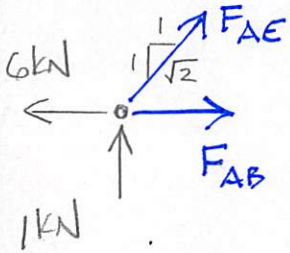
$$\circlearrowleft + \sum M_A = 0 = -6\,kN(2m) - 8\,kN(2m) + C_y(4m)$$

$$C_y = 7\,kN$$

$$+\uparrow \sum F_y = 0 = A_y + C_y - 8\,kN \qquad A_y = 1\,kN$$

$$\overset{+}{\rightarrow} \sum F_x = 0 = A_x + 6\,kN \qquad A_x = -6\,kN$$

JOINT A



$$+\uparrow \sum F_y = 0$$

$$= \frac{1}{\sqrt{2}} F_{AE} + 1\,kN$$

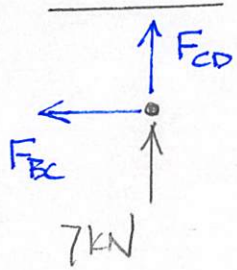
$$F_{AE} = -1.41\,kN$$

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

$$= F_{AB} + \frac{1}{\sqrt{2}} F_{AE} - 6\,kN$$

$$F_{AB} = 7\,kN$$

JOINT C



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

$$= -F_{BC} = 0$$

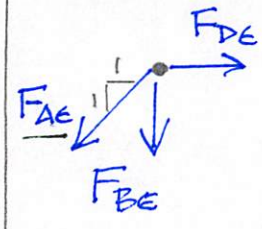
$$F_{BC} = 0$$

$$+\uparrow \sum F_y = 0$$

$$= F_{CD} + 7\,kN$$

$$F_{CD} = -7\,kN$$

JOINT E



$$+\uparrow \sum F_y = 0$$

$$= -F_{BC} - \frac{1}{\sqrt{2}} F_{AE}$$

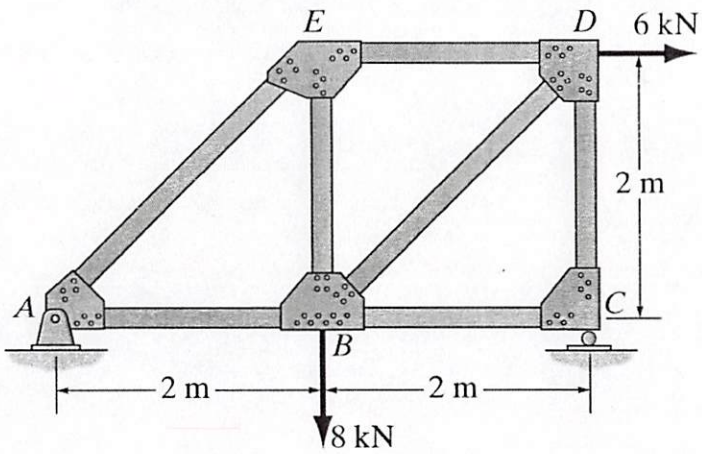
$$F_{BC} = 1\,kN$$

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

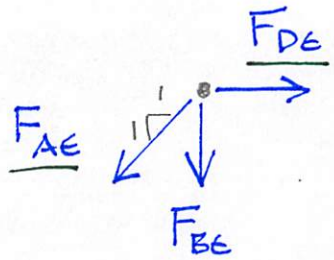
$$= F_{DE} - \frac{1}{\sqrt{2}} F_{AE}$$

$$F_{DE} = -1\,kN$$

Example 3b-4. Determine all the forces in the following truss.



JOINT E



$$+\uparrow \Sigma F_y = 0$$

$$= -F_{BE} - \frac{1}{\sqrt{2}} F_{AE}$$

$$F_{BE} = 1\ \text{kN}$$