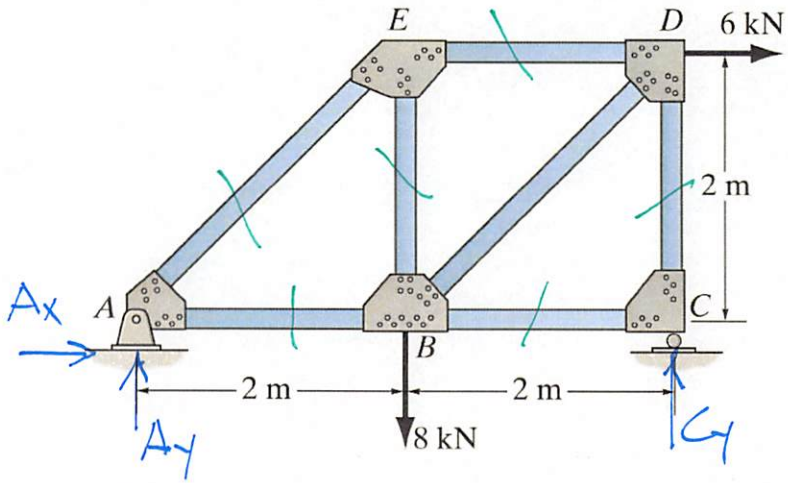
Example 3b-4. Determine all the forces in the following truss.



$r = 3$ ✓

$b = 7$

$j = 5$

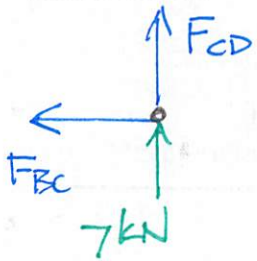
$\circlearrowleft + \sum M_A = 0 = -8\,kN(2m) - 6\,kN(2m) + C_y(4m)$

$C_y = 7\,kN$

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

$\rightarrow + \sum F_x = 0 = A_x + 6\,kN$ $\quad A_x = -6\,kN$

JOINT C



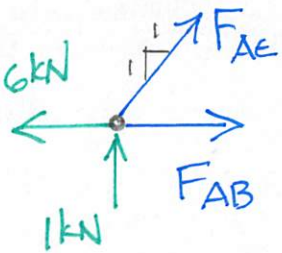
$+\uparrow \sum F_y = 0$

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

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

$\rightarrow + \sum F_x = 0 = -F_{BC}$

JOINT A



$+\uparrow \sum F_y = 0$

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

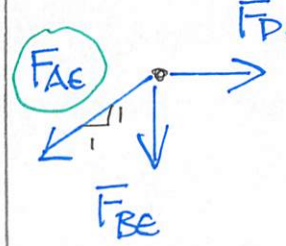
$F_{AE} = -1.41\,kN$

$\rightarrow + \sum F_x = 0$

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

$F_{AB} = 7\,kN$

JOINT E



$+\uparrow \sum F_y = 0 = -F_{BE} - \frac{1}{\sqrt{2}} F_{AE}$

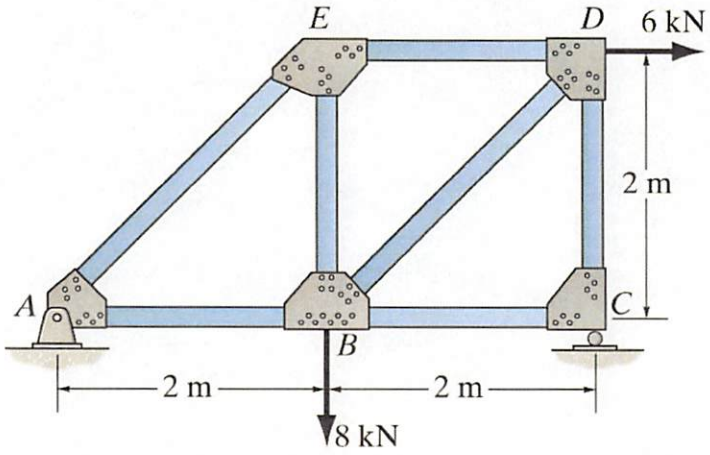
$F_{BE} = 1\,kN$

$\rightarrow + \sum F_x = 0$

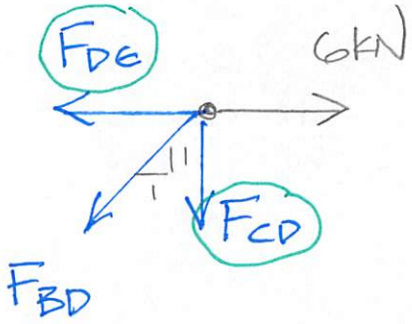
$= F_{DE} - \frac{1}{\sqrt{2}} F_{AE}$

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

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



JOINT D



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

$$= -F_{CD} - \frac{1}{\sqrt{2}} F_{BD}$$

$$F_{BD} = 9.9\,\text{kN}$$