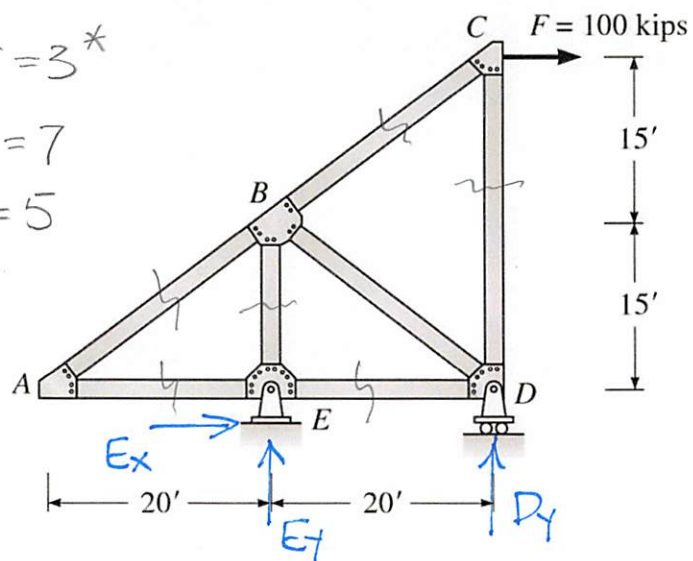


Example 3b-3. Determine all the forces in the following truss.

$$r = 3^*$$

$$b = 7$$

$$j = 5$$

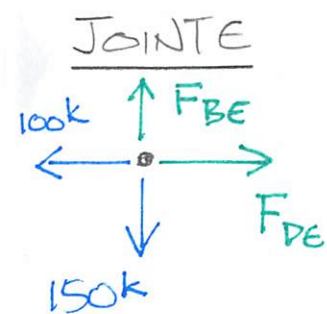


$$\sum M_E = 0 = -100k(30') + D_y(20') \quad \underline{D_y = 150k}$$

$$+\uparrow \sum F_y = 0 = E_y + D_y \quad \underline{E_y = -150k}$$

$$+\rightarrow \sum F_x = 0 = E_x + 100k \quad \underline{E_x = -100k}$$

* ZERO-FORCE MEMBER $\underline{\underline{F_{AB} = F_{AC} = 0}}$

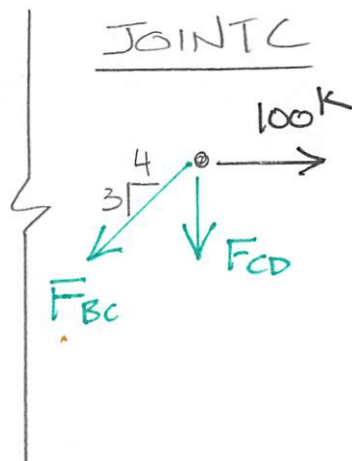


$$+\rightarrow \sum F_x = 0 = F_{DE} - 100k$$

$$\underline{\underline{F_{DE} = 100k}}$$

$$+\uparrow \sum F_y = 0 = F_{BE} - 150k$$

$$\underline{\underline{F_{BE} = 150k}}$$

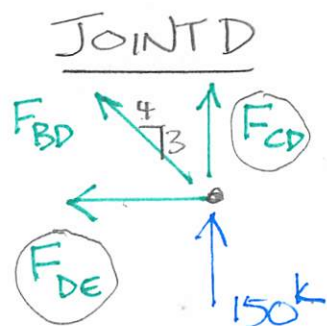


$$+\rightarrow \sum F_x = 0 = 100k - \frac{4}{5}F_{BC}$$

$$\underline{\underline{F_{BC} = 125k}}$$

$$+\uparrow \sum F_y = 0 = -F_{CD} - \frac{3}{5}F_{BC}$$

$$\underline{\underline{F_{CD} = -75k}}$$



$$+\rightarrow \sum F_x = 0 = -F_{DE} - \frac{4}{5}F_{BD}$$

$$\underline{\underline{F_{BD} = -125k}}$$