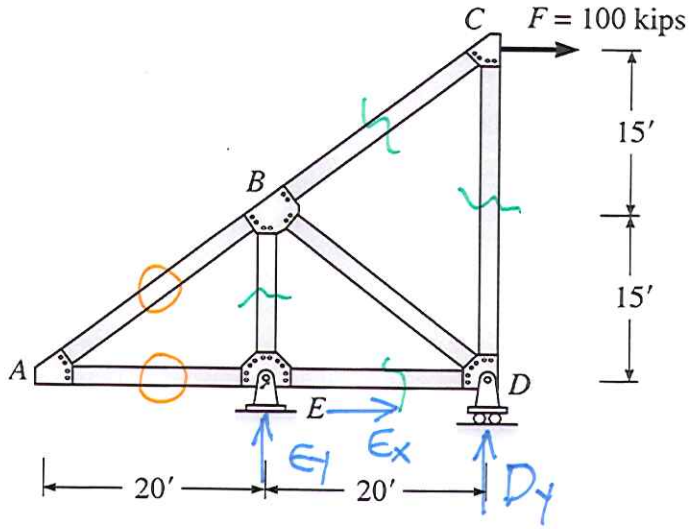
Example 3-3. Determine all the forces in the following truss.



$$\circlearrowleft \sum M_A = 0 = -100k(30') + D_y(20') \qquad D_y = 150k$$

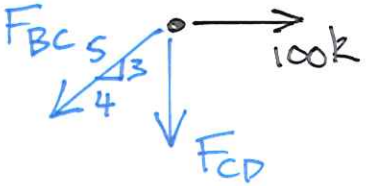
$$+\uparrow \sum F_y = 0 = D_y + E_y \qquad E_y = -D_y = -150k$$

$$+\rightarrow \sum F_x = 0 = E_x + 100k \qquad E_x = -100k$$

ZERO FORCE MEMBERS

$F_{AB} = 0$ $F_{AE} = 0$

JOINT C



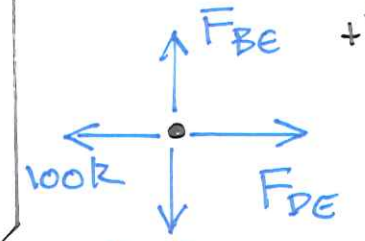
$$+\rightarrow \sum F_x = 0 = -F_{BC}\left(\frac{4}{5}\right) + 100k$$

$$F_{BC} = 125k$$

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

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

JOINT E



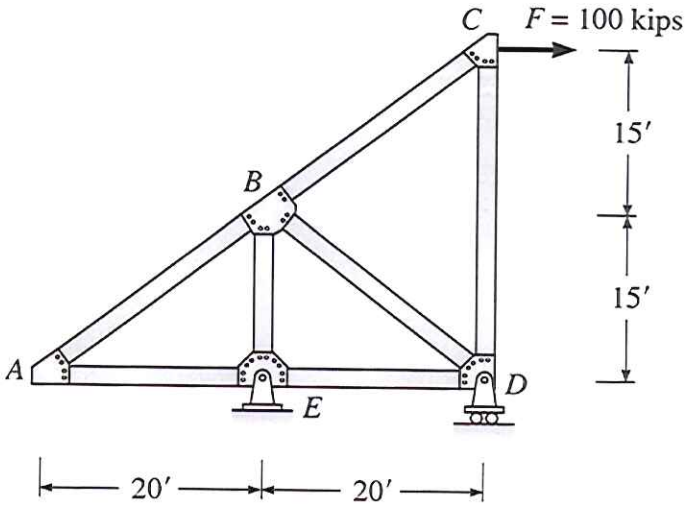
$$+\uparrow \sum F_y = 0 = F_{BE} - 150k$$

$$F_{BE} = 150k$$

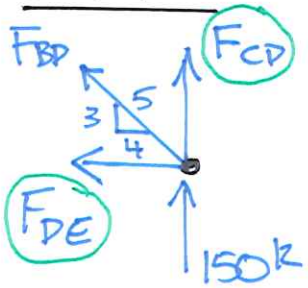
$$+\rightarrow \sum F_x = 0 = F_{DE} - 100k$$

$$F_{DE} = 100k$$

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



JOINT D



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

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