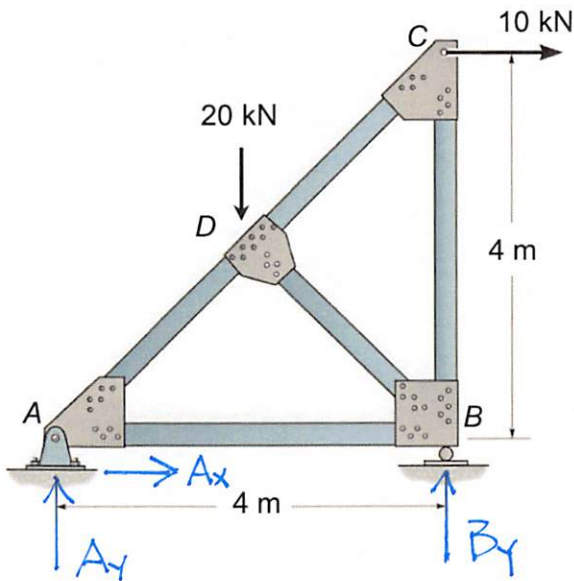


Determine all the bar forces in the truss.



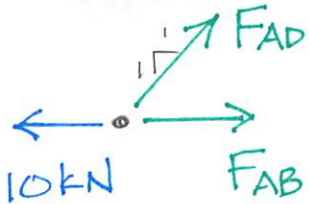
$$\sum M_A = 0 = -20 \text{ kN}(2 \text{ m}) - 10 \text{ kN}(4 \text{ m}) + B_y(4 \text{ m})$$

$$B_y = 20 \text{ kN}$$

$$\sum F_y = 0 = A_y + B_y - 20 \text{ kN}$$

$$A_y = 0 \text{ kN}$$

$$\sum F_x = 0 = A_x + 10 \text{ kN} \quad A_x = -10 \text{ kN}$$

JOINT A

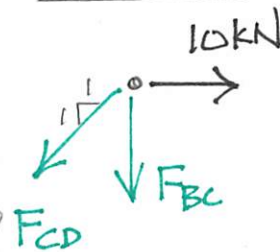
$$\sum F_y = 0 = \frac{1}{\sqrt{2}} F_{AD}$$

$$F_{AD} = 0$$

$$\sum F_x = 0$$

$$= F_{AB} - 10 \text{ kN}$$

$$F_{AB} = 10 \text{ kN}$$

JOINT C

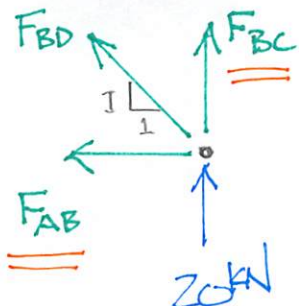
$$\sum F_x = 0$$

$$= -\frac{1}{\sqrt{2}} F_{CD} + 10 \text{ kN}$$

$$F_{CD} = 14.1 \text{ kN}$$

$$\sum F_y = 0 = -\frac{1}{\sqrt{2}} F_{CD} - F_{BC}$$

$$F_{BC} = -10 \text{ kN}$$

JOINT B

$$\sum F_x = 0$$

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

$$F_{BD} = -14.1 \text{ kN}$$