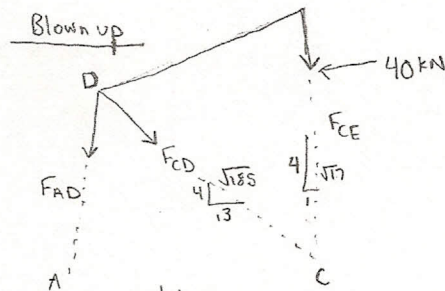


taken section I-I to solve for reactions



solving:

$$\sum M_D = 0$$

$$-20[1.5] - 20[7.5] + 20[6] + 40[3] - \frac{1}{\sqrt{17}} F_{CE}[3] - \frac{4}{\sqrt{17}} F_{CE}[6.25] = 0$$

$$-30 - 150 + 120 + 120 - \frac{3}{\sqrt{17}} F_{CE} - \frac{33}{\sqrt{17}} F_{CE} = 0$$

$$-180 + 240 - \frac{36}{\sqrt{17}} F_{CE} = 0$$

$$6.731 = -\frac{36}{\sqrt{17}} F_{CE} = -60$$

$$F_{CE} = 6.872 \text{ kN (T)}$$

$$\sum M_C = 0$$

$$20[8.25] + 20[2.25] + 20[9] + 40[6] + \frac{1}{\sqrt{17}} F_{AD}[3] + \frac{4}{\sqrt{17}} F_{AD}[9.75] = 0$$

$$165 + 45 + 180 + 240 + \frac{3}{\sqrt{17}} F_{AD} + \frac{39}{\sqrt{17}} F_{AD} = 0$$

$$\frac{42}{\sqrt{17}} F_{AD} = -630$$

$$F_{AD} = -61.845 \text{ kN (C)}$$

$$\sum F_y = 0$$

$$\frac{4}{\sqrt{17}} (61.845) - 20 - 20 - \frac{4}{\sqrt{17}} (6.87) - \frac{4}{\sqrt{185}} F_{CD} = 0$$

$$\frac{247.38}{\sqrt{17}} - 40 - \frac{27.48}{\sqrt{17}} - \frac{4}{\sqrt{185}} F_{CD} = 0$$

$$F_{CD} = 45.35 \text{ kN (T)}$$