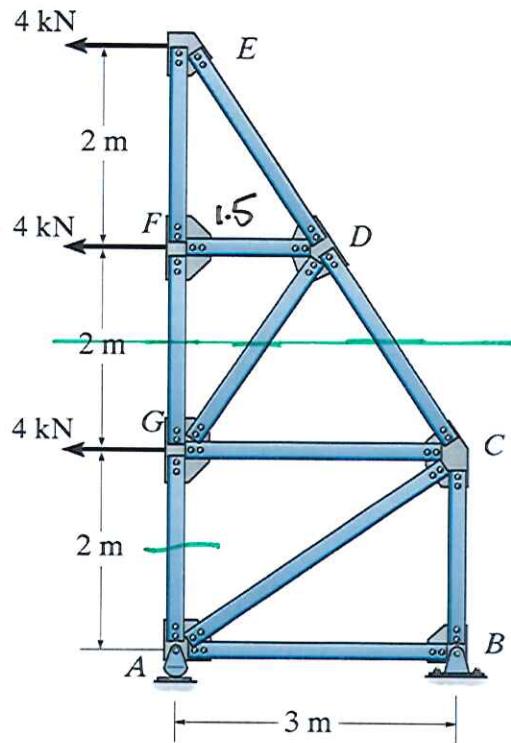


Problem 3-21: Determine the forces in members FG , GD , CD , and GA .



Joint E free body diagram:

$$\sum M_E = 0 = -\frac{3}{5}F_{DG}(4m) - 4kN(2m)$$

$$\underline{F_{DG} = -3.33 \text{ kN}}$$

Joint D free body diagram:

$$\sum M_G = 0 = -\frac{4}{5}F_{CD}(3m) + 4kN(2m + 4m)$$

$$\underline{F_{CD} = 10 \text{ kN}}$$

Joint G free body diagram:

$$\sum M_D = 0 = F_{FG}(1.5m) + 4kN(2m)$$

$$\underline{F_{FG} = -5.33 \text{ kN}}$$

$$+\uparrow\sum F_y = 0 = -F_{GA} + F_{FG} + \frac{4}{5}F_{DG}$$

