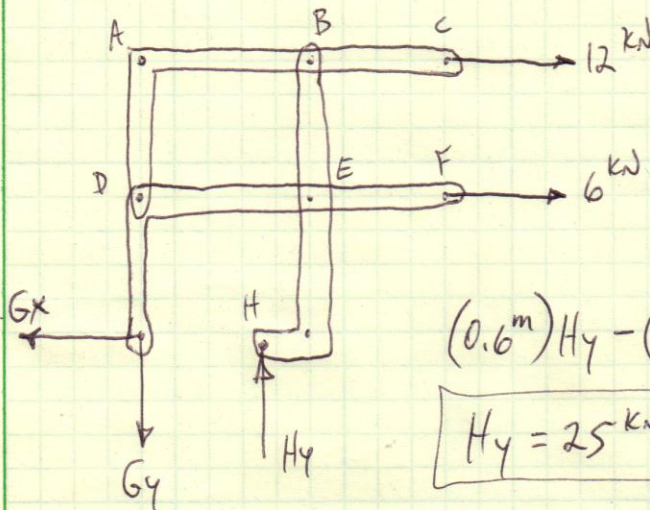


FBD:



$$\sum F_x = 0: \quad G_x = 18 \text{ kN}$$

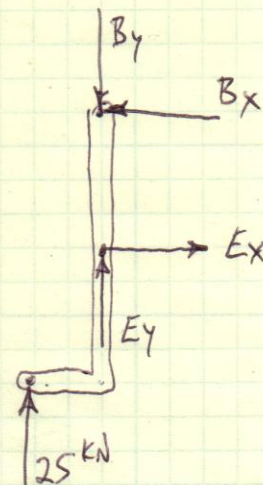
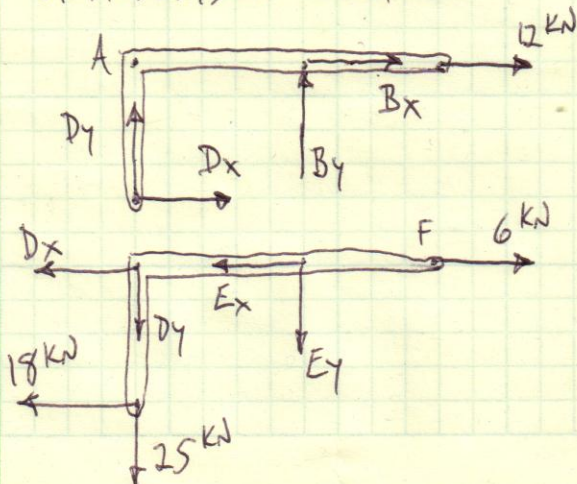
$$\sum F_y = 0: \quad H_y = G_y$$

$$\sum M_G = 0 \uparrow:$$

$$(0.6 \text{ m}) H_y - (0.5 \text{ m})(6 \text{ kN}) - (1.0 \text{ m})(12 \text{ kN}) = 0$$

$$H_y = 25 \text{ kN} = G_y$$

DISASSEMBLE FRAME:



PROB. 6,103 CONT.

BEH:

$$\sum F_x = 0: E_x = B_x$$

$$\sum F_y = 0: 25 + E_y - B_y = 0$$

$$\sum M_B = 0 \uparrow: (0.5\text{m})E_x - (0.2\text{m})(25\text{kN}) = 0 \Rightarrow E_x = 10\text{kN} = B_x$$

GDEF:

$$\sum F_x = 0: 6 - 18 - D_x - E_x = 0$$

$$\sum F_y = 0: -25 - D_y - E_y = 0$$

$$\sum M_D = 0 \uparrow: -(0.5\text{m})(18\text{kN}) - (0.8\text{m})E_y = 0 \Rightarrow E_y = -11.25\text{kN}$$

$$D_y = -25 - E_y = -25 - (-11.25) = -13.75\text{kN}$$

DABC:

$$\sum F_x = 0: D_x + B_x + 12 = 0$$

$$\sum F_y = 0: D_y + B_y = 0 \Rightarrow B_y = -D_y = 13.75\text{kN}$$

$$\sum M_B = 0 \uparrow: +(0.8\text{m})(13.75\text{kN}) + (0.5\text{m})D_x = 0$$

$$D_x = -22\text{kN}$$

$$B_x = -12 - D_x = -12 - (-22) = 10\text{kN} \quad \text{CHECKS}$$