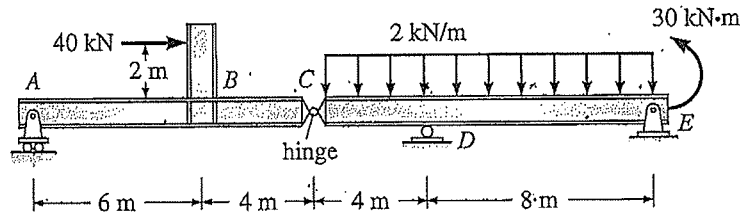


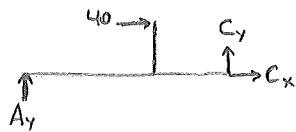
Name: Solution

In-Class Problem 2

Determine the reactions at all the supports and the force transmitted through hinge C



ABC



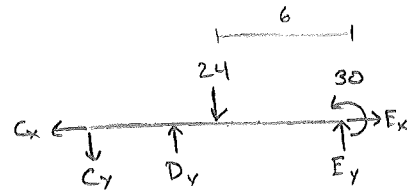
$$\sum F_x = 0: 40 + C_x = 0$$

$$\sum F_y = 0: A_y + C_y = 0$$

$$\sum M_C = 0: -A_y(10) - 40(2) = 0$$

$$\Rightarrow \begin{cases} A_y = -8 \text{ kN} \\ C_x = -40 \text{ kN} \\ C_y = 8 \text{ kN} \end{cases}$$

CDE



$$\sum F_x = 0: -C_x + E_x = 0$$

$$\sum F_y = 0: -C_y + D_y - 24 + E_y = 0$$

$$\sum M_E = 0: C_y(12) - D_y(8) + 24(6) + 30 = 0$$

$$\Rightarrow \begin{cases} D_y = 33.75 \text{ kN} \\ E_x = -40 \text{ kN} \\ E_y = -1.75 \text{ kN} \end{cases}$$