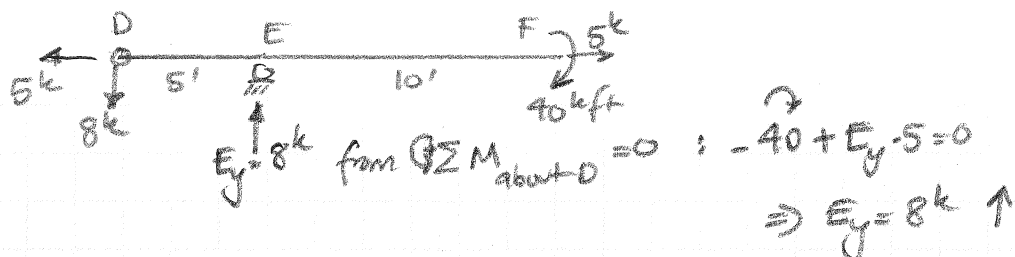
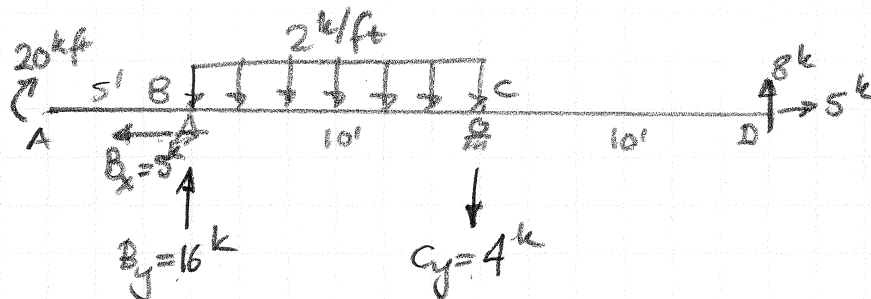


FBD DEF:



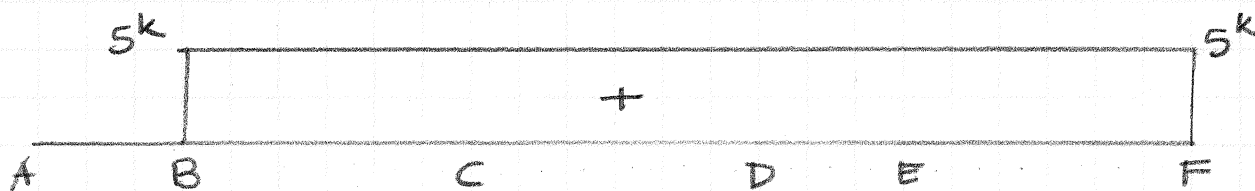
FBD ABCD



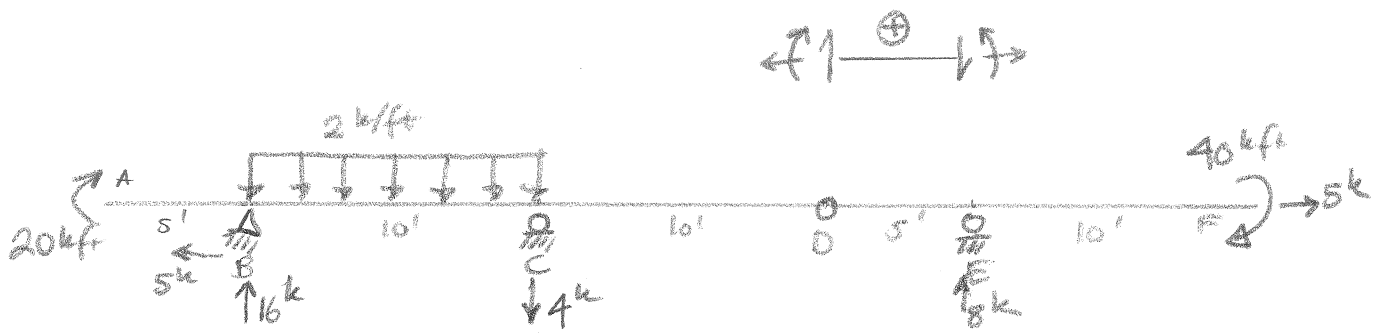
$$\rightarrow \sum F_x = 0 : 5 \text{ k} + B_x = 0 \Rightarrow B_x = -5 \text{ k}, \text{ i.e. } B_x = 5 \text{ k} \leftarrow$$

$$\curvearrow \sum M_{\text{about C}} = 0 : -20 + \underbrace{2 \text{ k/ft} \times 10' \times 5'}_{100 \text{ kft}} + 8 \text{ k} \times 10' - B_y \times 10' = 0 \Rightarrow B_y = 16 \text{ k} \uparrow$$

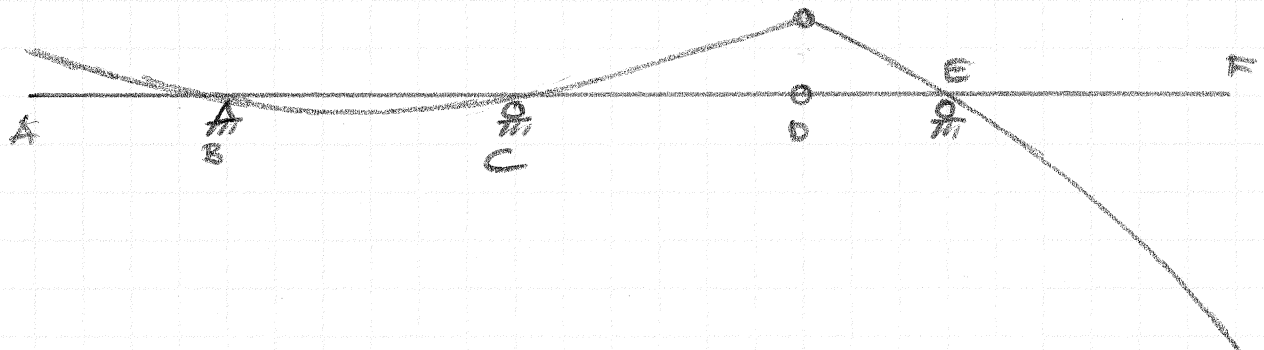
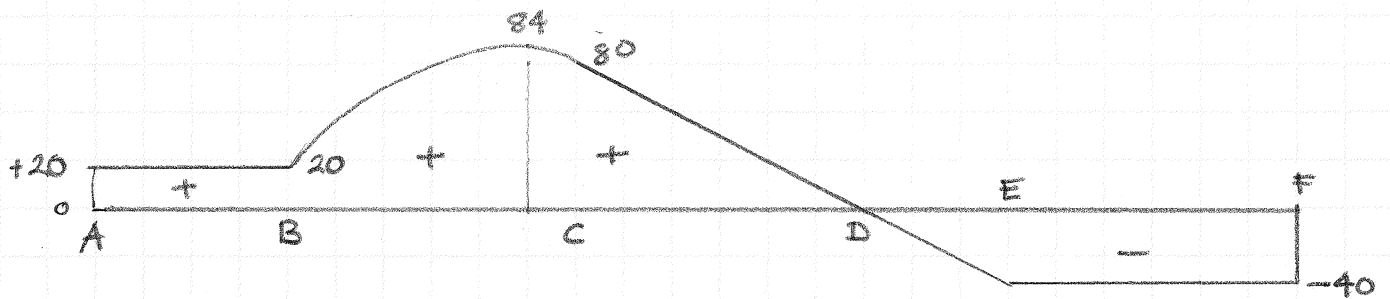
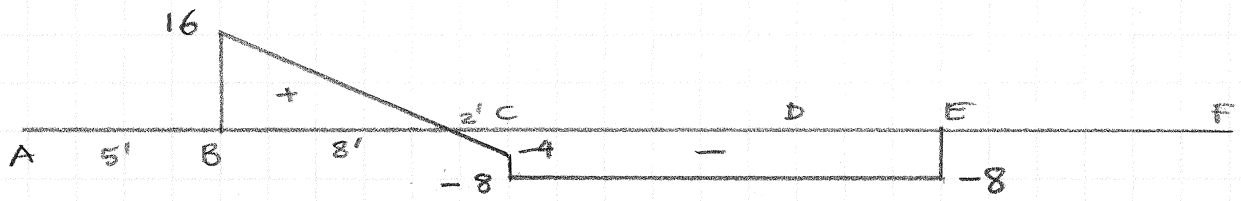
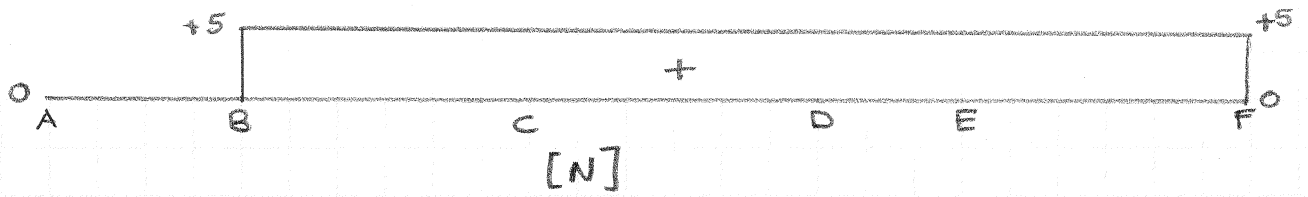
$$\uparrow \sum F_y = 0 : 16 \text{ k} - \underbrace{2 \text{ k/ft} \times 10'}_{20 \text{ k}} + C_y + 8 \text{ k} = 0 \Rightarrow C_y = -4, \text{ i.e. } C_y = 4 \text{ k} \downarrow$$



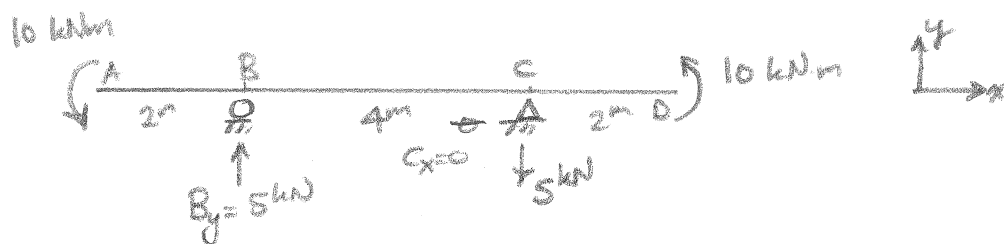
[N] Axial Force Diagram



$$\left[\begin{matrix} \uparrow \\ \oplus \end{matrix} \right] \rightarrow$$



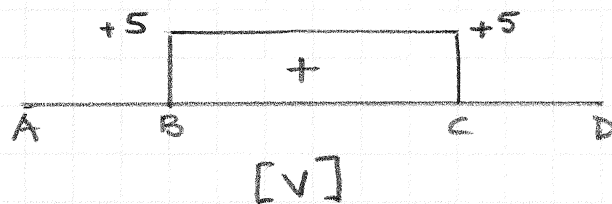
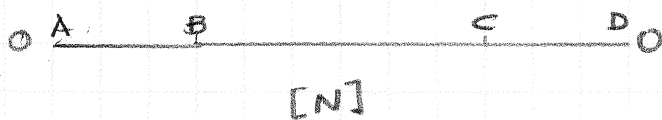
2)



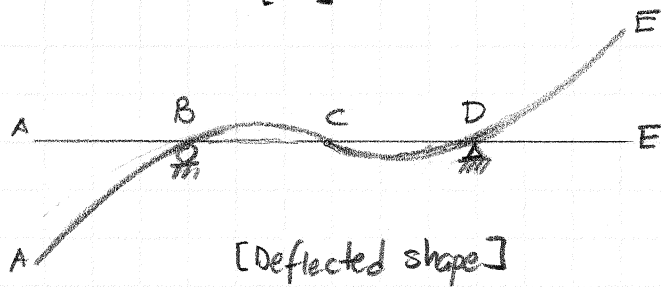
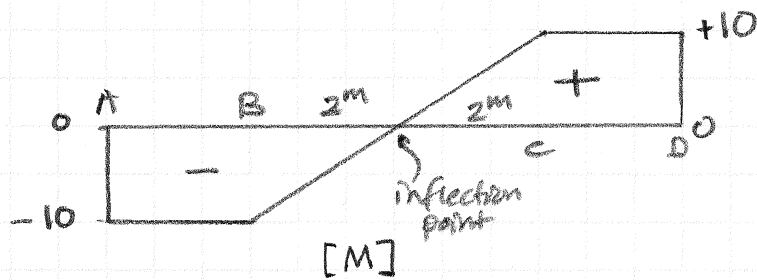
$\curvearrowright \sum M_{\text{about } B} = 0 : 10 + 10 + C_y \cdot 4 = 0 \Rightarrow C_y = -5 \text{ kN}$ i.e. $C_y = 5 \text{ kN} \downarrow$

$\uparrow \sum F_y = 0 : B_y - 5 = 0 \Rightarrow B_y = 5 \text{ kN} \uparrow$

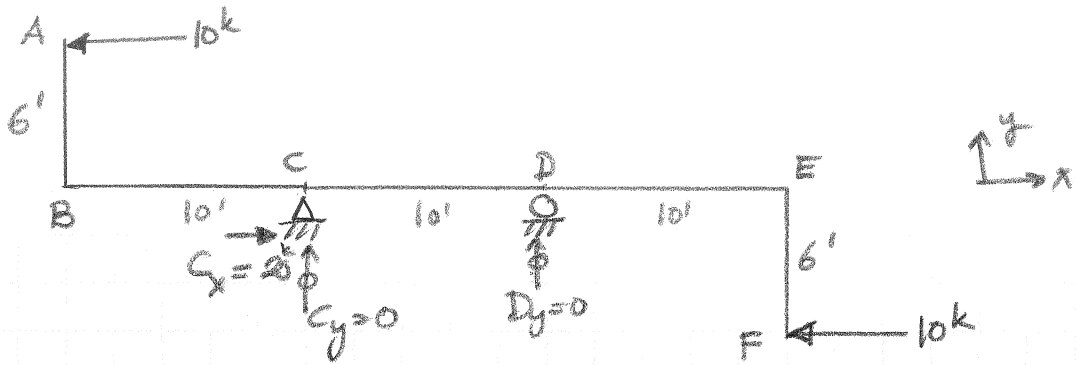
$\rightarrow \sum F_x = 0 : C_x = 0$



$\curvearrowright \oplus \int 1 = 1 \curvearrowright$



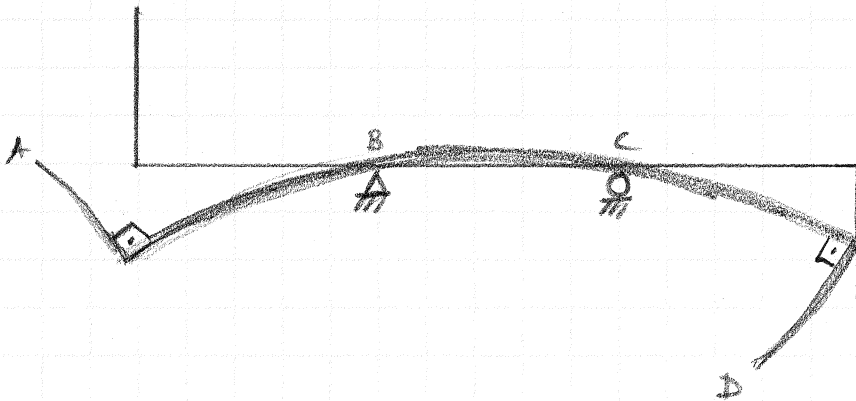
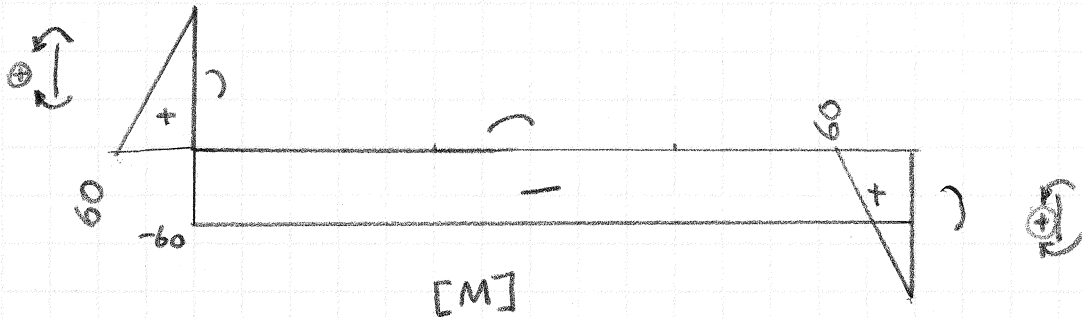
3)



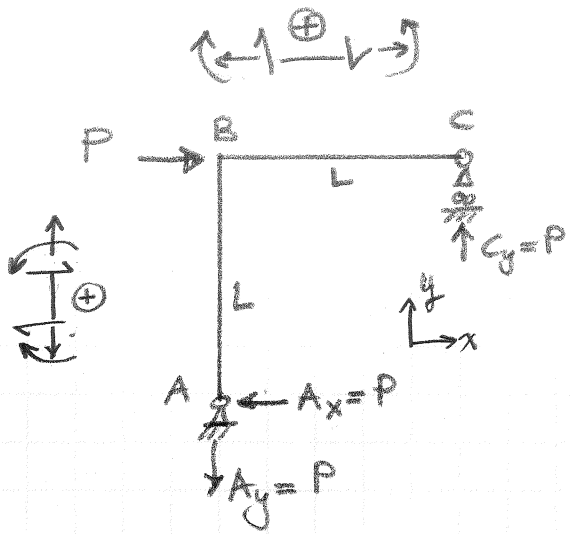
$$\rightarrow \sum F_x = 0 : -10 + C_x - 10 = 0 \Rightarrow C_x = 20k \rightarrow$$

$$\curvearrowright \sum M_{\text{about } D} = 0 : 10 \times 6' - C_y \times 10' - 10 \times 6' = 0 \Rightarrow C_y = 0$$

$$\uparrow \sum F_y = 0 : C_y + D_y = 0 \Rightarrow D_y = 0$$



1)



$$\pm \sum F_x = 0 : P + A_x = 0 \Rightarrow A_x = -P$$

i.e. $A_x = P \leftarrow$

$$\curvearrowleft \sum M_{\text{about } A} = 0 : -P \cdot L + C_y \cdot L = 0$$

$\Rightarrow C_y = P \uparrow$

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

$\Rightarrow A_y = -P, \text{ i.e. } A_y = P \downarrow$

