

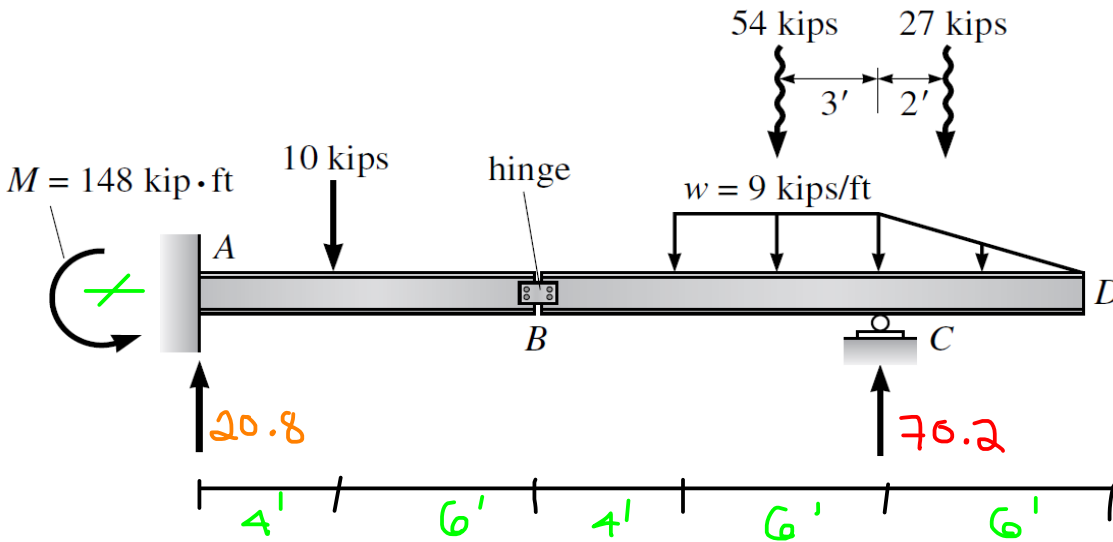
$$\sum M_C = 0 = 24(5) - E_y(10) = 0$$

$$E_y = 12$$

$$\sum M_A = B_y(10) - 12(15) - 24(20) + 12(25) = 0 \rightarrow B_y = 36$$

$$\sum F_y = A_y + 36 - 12 - 24 + 12 = 0$$

$$A_y = -12 \rightarrow A_y = 12 \uparrow$$

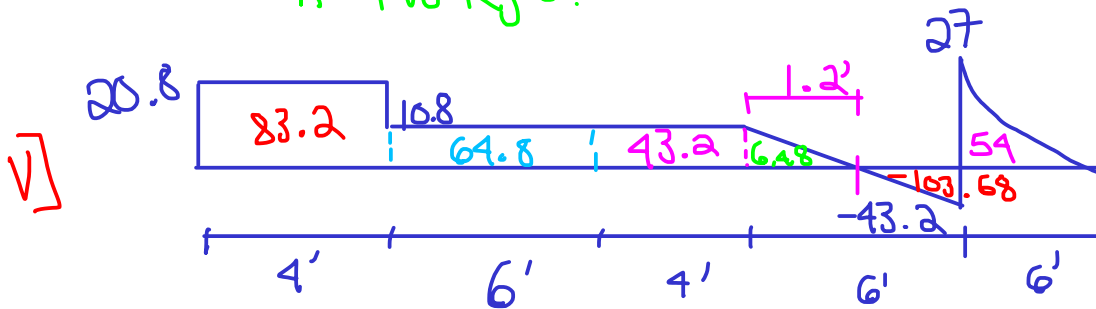


$$\sum M_B = (9)(6)(9) + \frac{1}{2}(6)(9)(12) - C_y(10) = 0 \rightarrow C_y = 70.2 \uparrow$$

$$\sum F_y = A_y - 10 - 9(6) - \frac{1}{2}(6)(9) + 70.2 = 0 \rightarrow A_y = 20.8 \uparrow$$

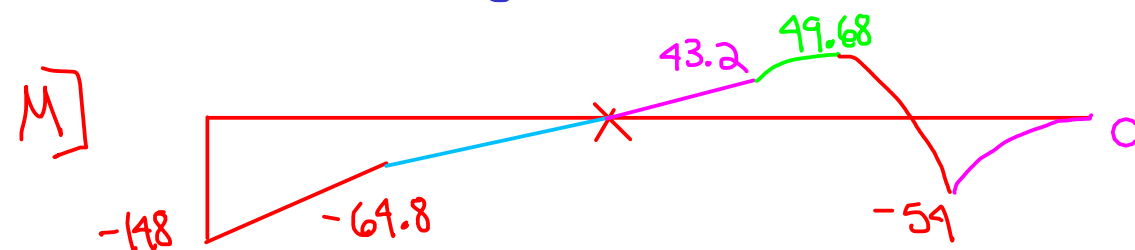
$$\sum M_A = M_A - 10(4) - 9(6)(17) - \frac{1}{2}(6)(9)(22) + 70.2(20) = 0$$

$$M_A = 148 \text{ kft.}$$

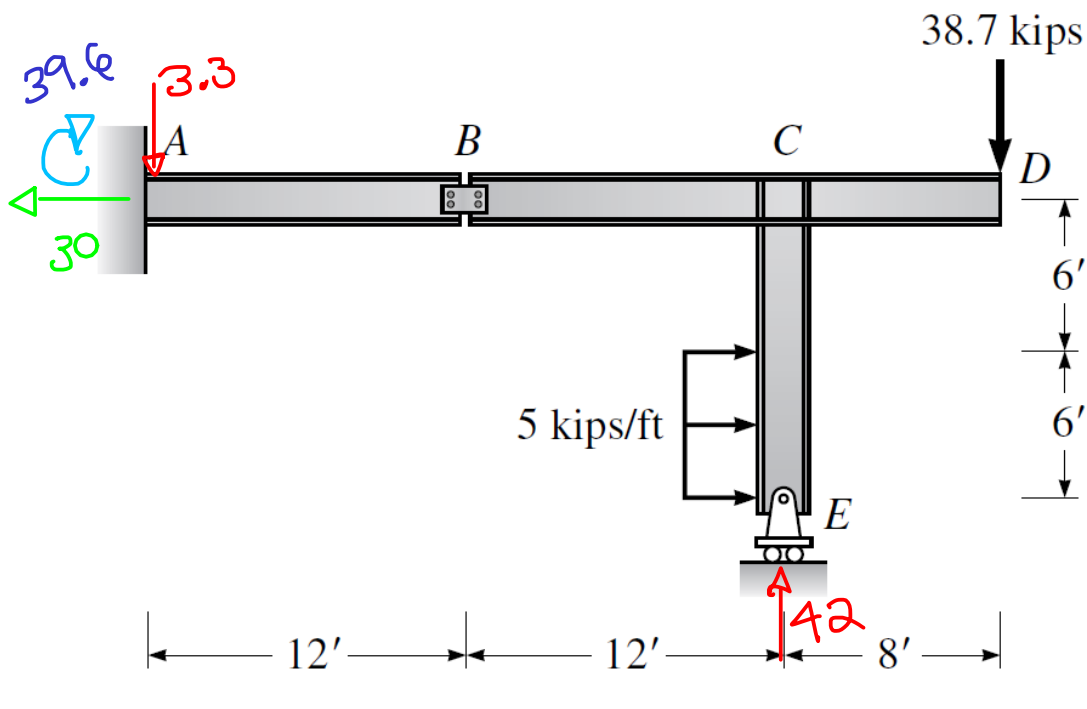


$$10.8 - 9(x) = 0$$

$$x = 1.2'$$



$$\frac{1}{3}bh = 54$$



$$\begin{aligned} \sum M_B &= 38.7(20) \\ &\quad - 5(6)(9) \\ &\quad - E_y(12) = 0 \end{aligned}$$

$$\rightarrow E_y = 42$$

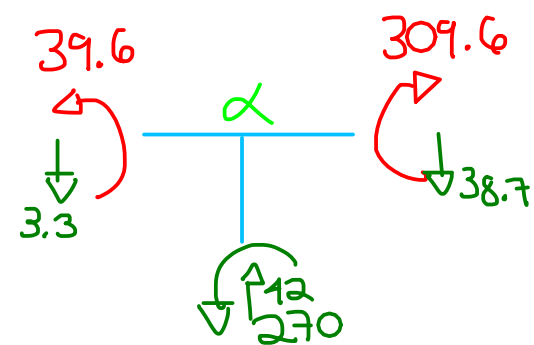
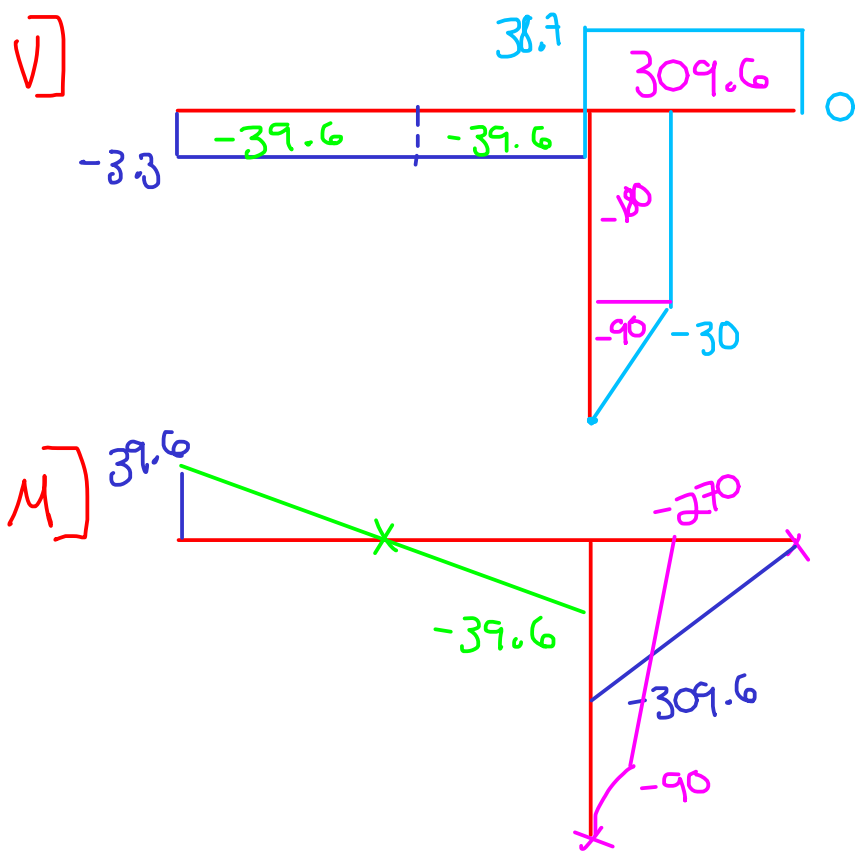
$$\sum F_y = 42 - 38.7 - A_y = 0$$

$$A_y = 3.3$$

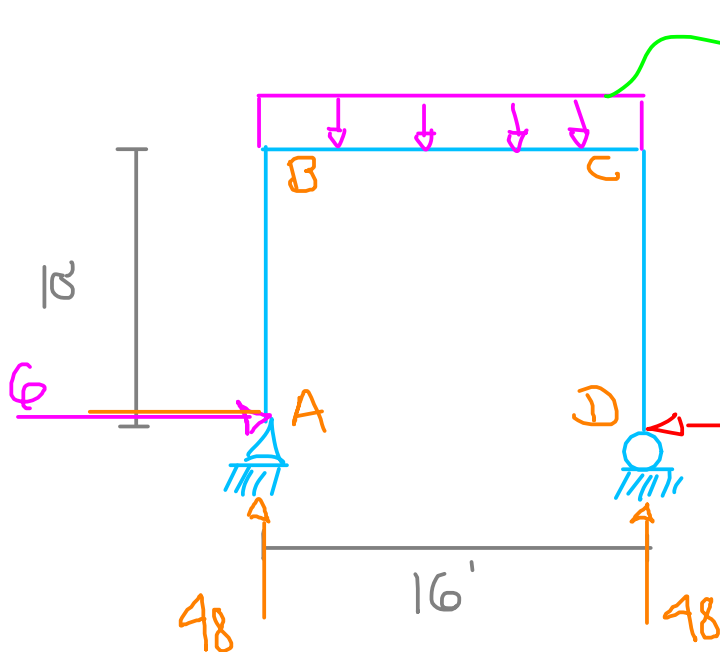
$$\sum F_x = 5(6) - A_x = 0$$

$$A_x = 30$$

$$\begin{aligned} \sum M_A &= 38.7(32) - 6(5)(9) - 42(24) + M_A = 0 \\ M_A &= 39.6 \curvearrowright \end{aligned}$$



$$\begin{aligned} \sum M_x &= 39.6 + 270 - 309.6 \\ &= \underline{0} \end{aligned}$$



$$\sum M_A = (6)(6)(8) - D_y(16) = 0$$

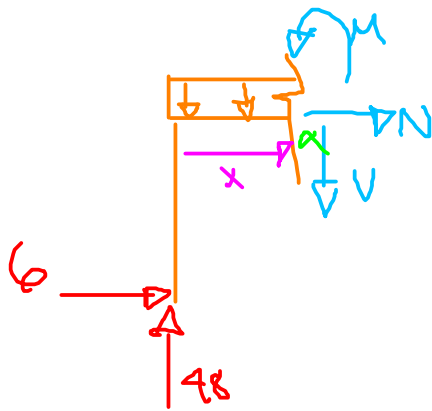
$$D_y = 48 \text{ k} \uparrow$$

$$\sum F_y = -16(6) + 48 + A_y = 0$$

$$A_y = 48 \uparrow$$

$$\sum F_x = -6 + A_x = 0$$

$$A_x = 6 \text{ k} \rightarrow$$



$$\sum F_y = 48 - 6x - V = 0$$

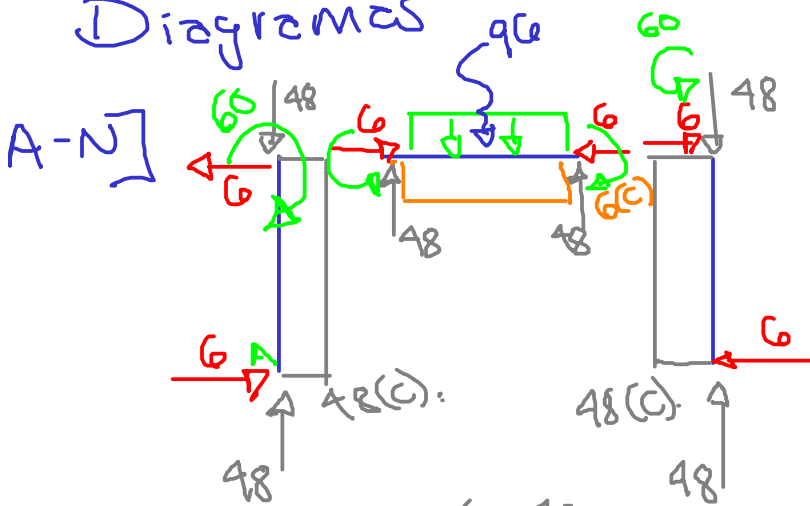
$$V = -6x + 48$$

$$\sum M_z = 48x - 6(10) - 6x\left(\frac{x}{2}\right) - M = 0$$

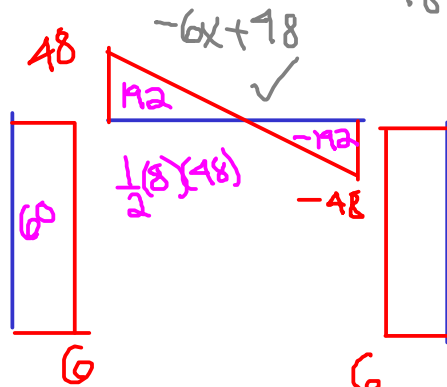
$$M = -3x^2 + 48x - 60$$

Válido desde 0 hasta 16

Diagramas



V



$$\sum M_A = 6(10) - M = 0$$

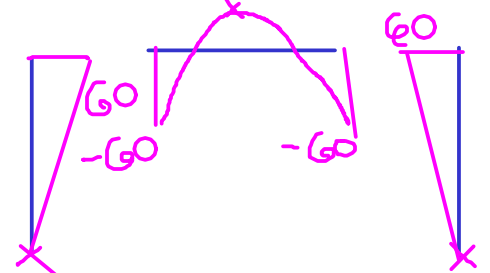
$$M = 60$$

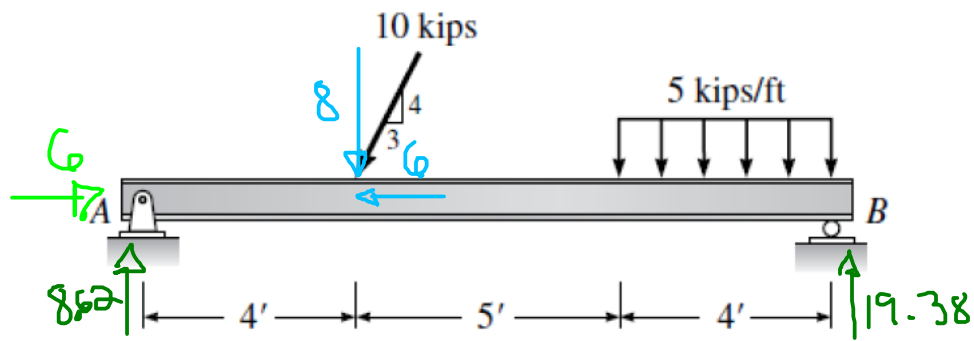
$$\sum M_B = 60 - 6(10) = 0$$

$$\sum M_C = 60 - 6(10) = 0$$

$$-3x^2 + 48x - 60$$

M

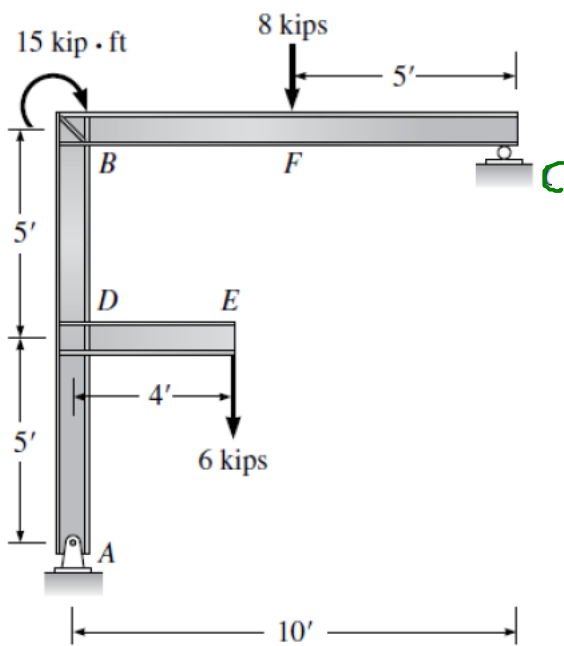




$$\sum F_x = A_x - 6 = 0 \rightarrow A_x = 6$$

$$\sum M_A = (8)(4) + 5(4)(11) - B_y(13) = 0 \rightarrow B_y = 19.38 \uparrow$$

$$\sum F_y = A_y - 8 - 5(4) + 19.38 = 0 \rightarrow A_y = 8.62 \uparrow$$



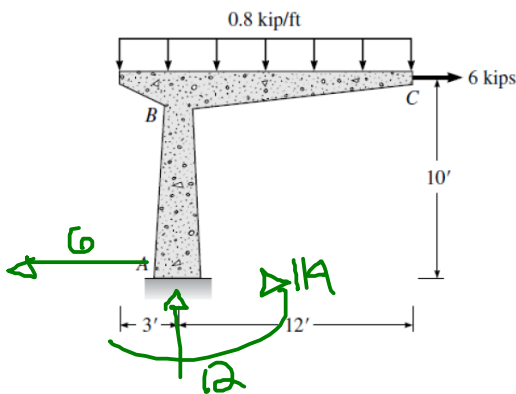
$$\sum M_A = 6(4) + 15 + 8(5) - C_y(10) = 0$$

$$C_y = 7.9 \uparrow$$

$$\sum F_y = A_y - 6 - 8 + 7.9 = 0$$

$$\rightarrow A_y = 6.1 \uparrow$$

$$\sum F_x = A_x = 0.$$

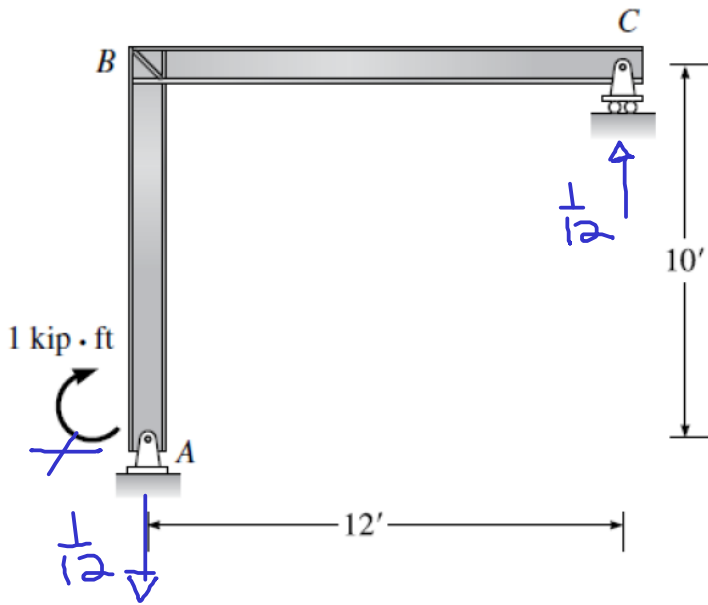


$$\sum F_x = 6 - A_x = 0 \rightarrow A_x = 6 \leftarrow$$

$$\sum F_y = 0.8(15) - A_y = 0 \rightarrow A_y = 12 \uparrow$$

$$\sum M_{z_A} = 0.8(15)(7.5 - 3) + 6(10) - M_A = 0$$

$$M_A = 114 \text{ Kft } \odot$$



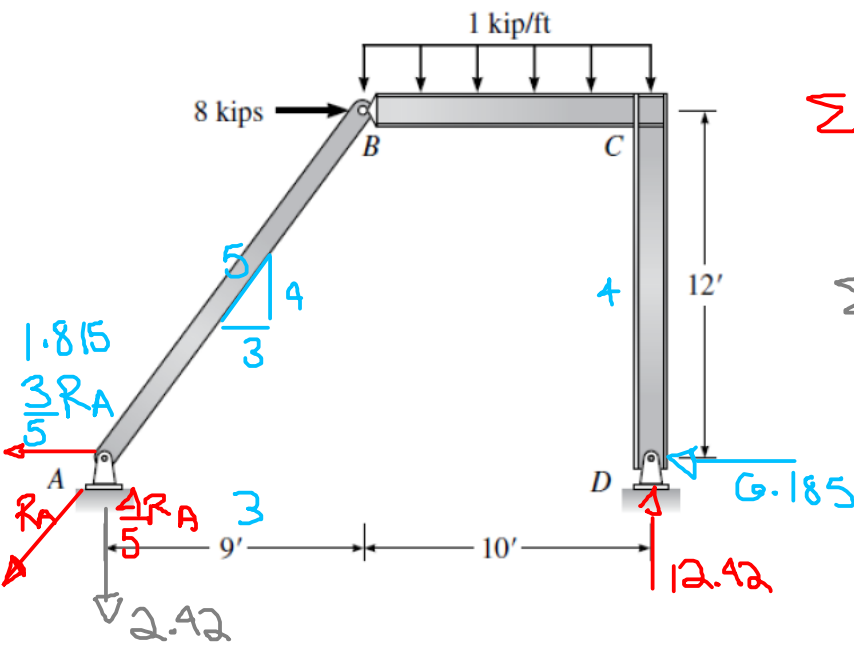
$$\sum M_A = 1 - C_y(12) = 0$$

$$C_y = \frac{1}{12}$$

$$\sum F_y = \frac{1}{12} - A_y = 0$$

$$A_y = \frac{1}{12}$$

$$\sum F_x = A_x = 0$$



$$\sum M_A = (8)(12) + (1)(10)(14) - D_y(19) = 0 \rightarrow D_y = 12.42 \uparrow$$

$$\sum F_y = 12.42 - 1(10) - A_y = 0$$

$$A_y = 2.42 \downarrow$$

$$\frac{4}{5} R_A = 2.42$$

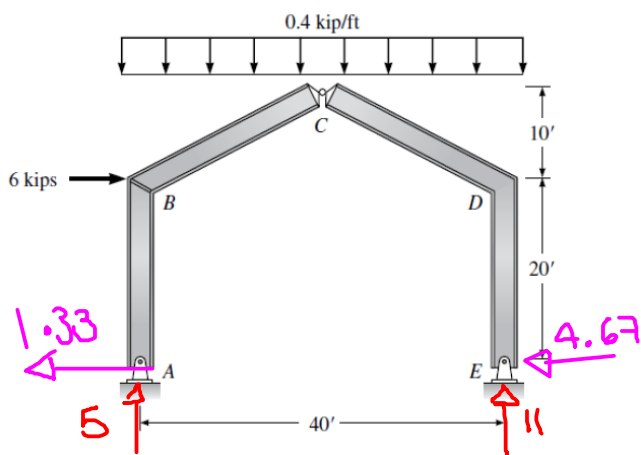
$$R_A = 3.035$$

$$\frac{3}{5} R_A = 1.815$$

$$\sum F_x = -A_x + 8 - D_x = 0$$

$$-1.815 + 8 = D_x$$

$$D_x = 6.185$$



$$\sum M_A = 6(20) + 0.4(40)(20) - E_y(40) = 0$$

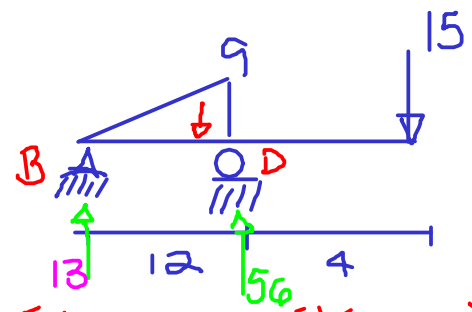
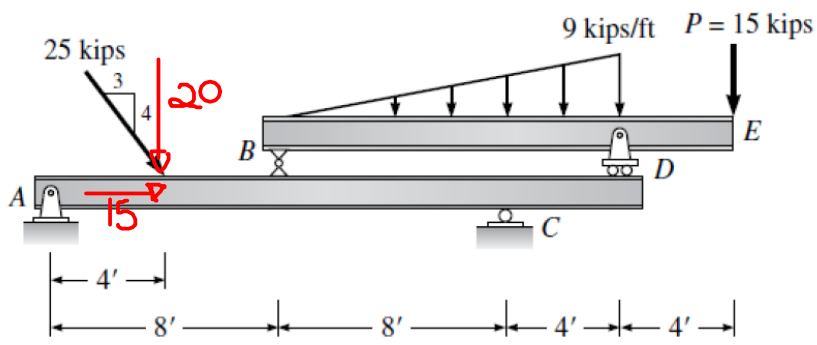
$$E_y = 11$$

$$\sum F_y = -0.4(40) + 11 + A_y = 0$$

$$A_y = 5$$

$$\sum M_C = 0.4(20)(10) + E_x(30) - 11(20) = 0$$

$$E_x = 4.67 \quad \sum F_x = 4.67 + 6 - A_x = 0 \rightarrow A_x = 1.33$$



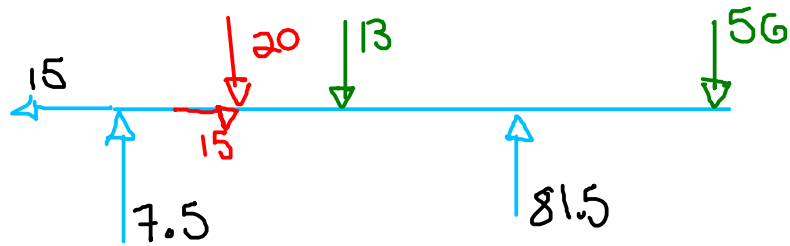
$$\sum M_B = \frac{1}{2}(12)(9)\left(\frac{2}{3} \cdot 12\right) + 15(16) - D_y(12) = 0$$

$$- D_y(12) = 0$$

$$D_y = 56$$

$$\sum F_y = B_y - \frac{1}{2}(12)(9) - 15 + 56 = 0$$

$$B_y = 13$$



$$\sum F_x = -A_x + 15 = 0 \rightarrow A_x = 15$$

$$\sum M_A = 20(4) + 13(8) - C_y(16) + 56(20) = 0 \rightarrow C_y = 81.5 \uparrow$$

$$\sum F_y = -20 - 13 - 56 + 81.5 + A_y = 0 \rightarrow A_y = 7.5 \uparrow$$