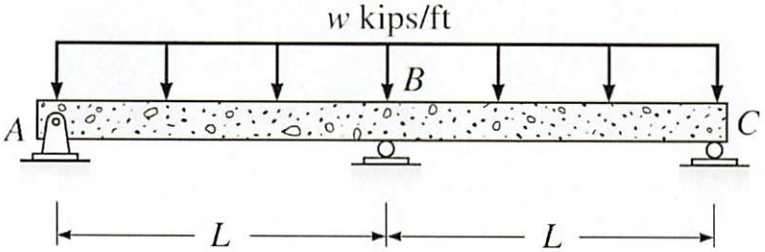
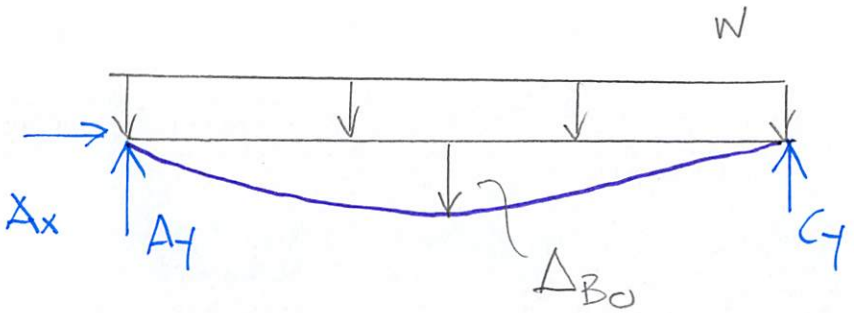
Problem 9a-1 – Compute the reactions and draw the shear and moment curves for the following beam.

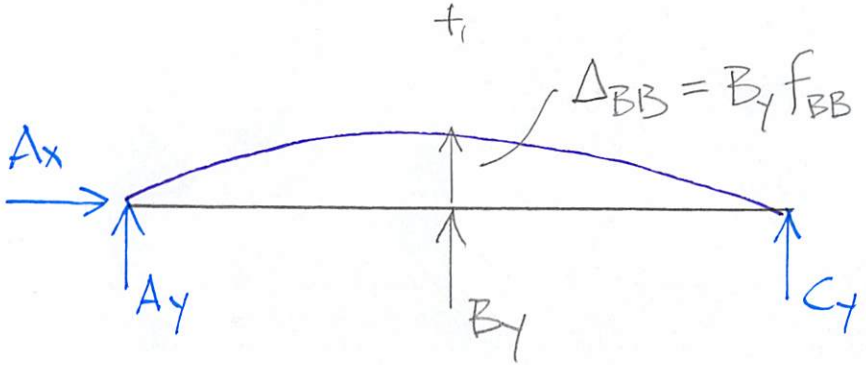


$$\Delta_B = 0$$



$$\Delta_{B_o} = -\frac{5w(2L)^4}{384EI}$$

$$\Delta_{BB} = \frac{B_y(2L)^3}{48EI}$$

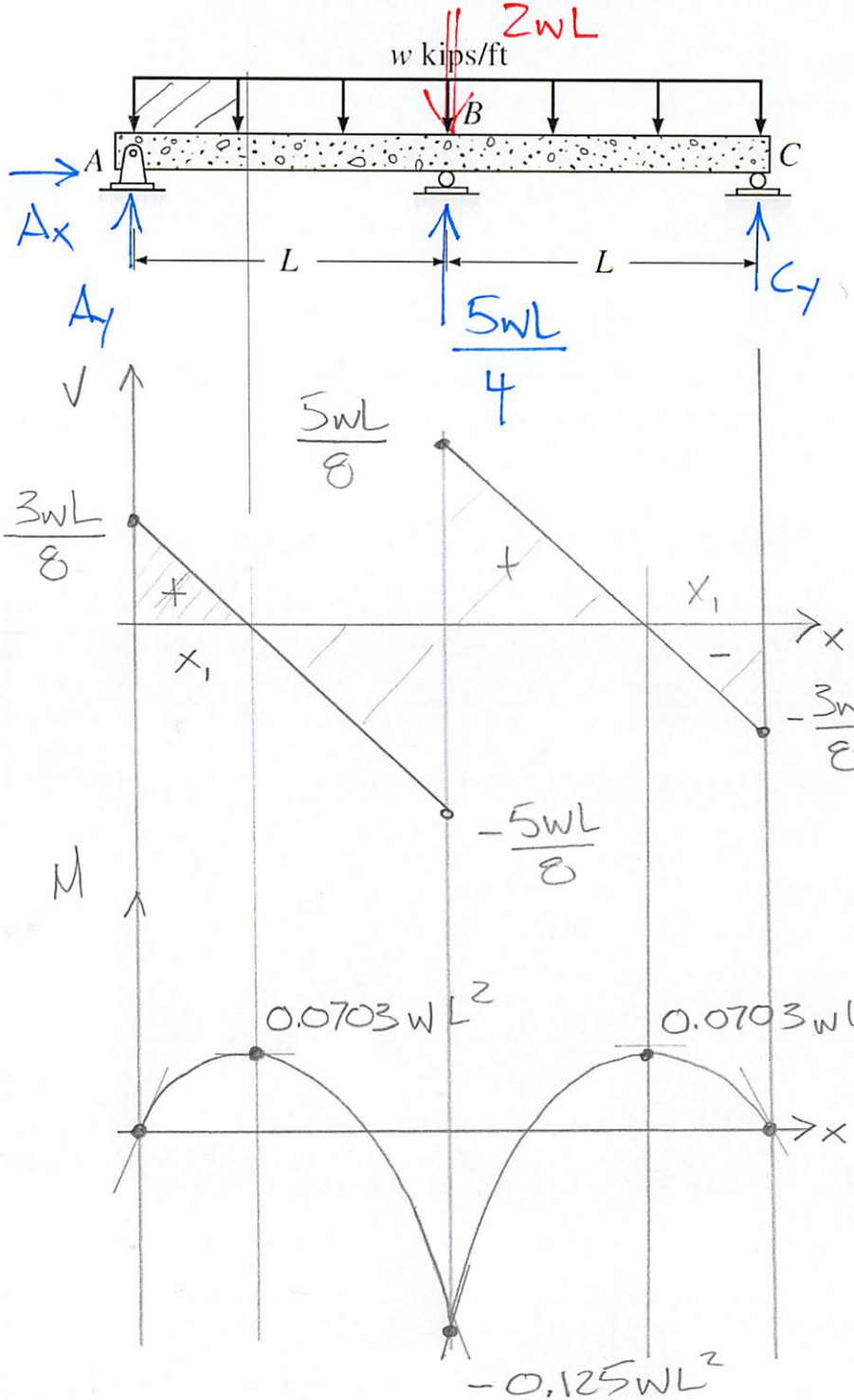


$$\Delta_B = 0 = \Delta_{B_o} + \Delta_{BB}$$

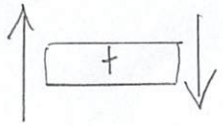
$$-\frac{5w(16L^4)}{384EI} + \frac{B_y(8L^3)}{48EI} = 0$$

$$B_y = \frac{5wL}{4} \qquad [F/L][L] = [F]$$

Problem 9a-1 – Compute the reactions and draw the shear and moment curves for the following beam.



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



$$\circlearrowleft \sum M_A = 0 = -2wL(L) + \frac{5wL}{4}(L) + C_y(2L)$$

$$C_y = \frac{3wL}{8}$$

$$+\uparrow \sum F_y = 0 = A_y + C_y + \frac{5wL}{4} - 2wL$$

$$A_y = \frac{3wL}{8}$$

$$-\frac{3wL}{8} = -wx_1$$

$$x_1 = \frac{3L}{8}$$

$$\Delta V = \int w\,dx \quad * \qquad \frac{dV}{dx} = w$$

$$\Delta M = \int V\,dx \qquad \frac{dM}{dx} = V$$