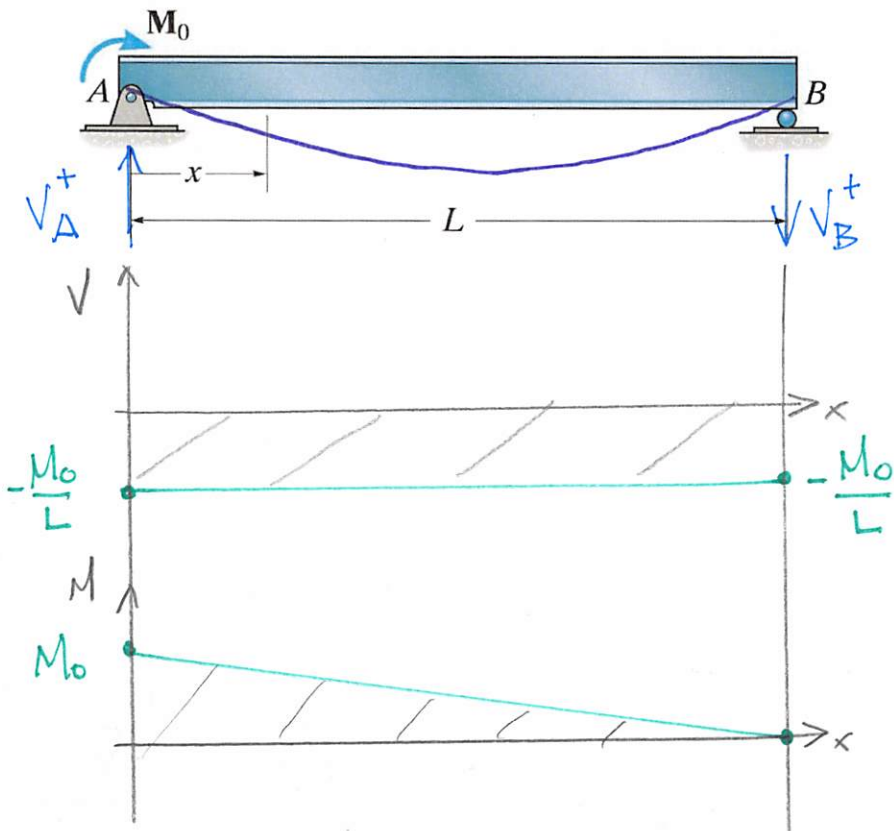


Example 7b-4: Use the conjugate beam method to determine the slope at point B and the displacement at $x = L/2$. Assume that EI is constant.



$$\sum M_B = 0 = -M_0 - V_A(L)$$

$$V_A = -\frac{M_0}{L}$$

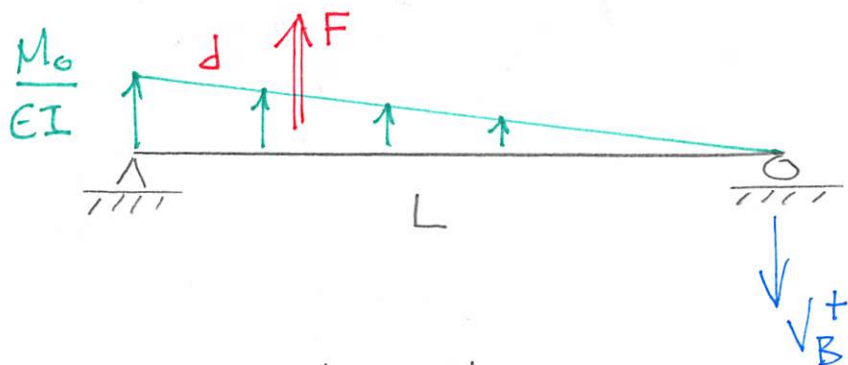
$$\sum F_y = 0 = V_A - V_B$$

$$V_B = -\frac{M_0}{L}$$

$$\sum M_A = 0 = Fd - V_B(L)$$

$$V_B = \frac{M_0 L}{6EI} \Rightarrow \Theta_B$$

CONJUGATE BEAM



$$F = \frac{1}{2}(L) \frac{M_0}{EI} = \frac{M_0 L}{2EI} \quad d = \frac{1}{3}(L) = \frac{L}{3}$$