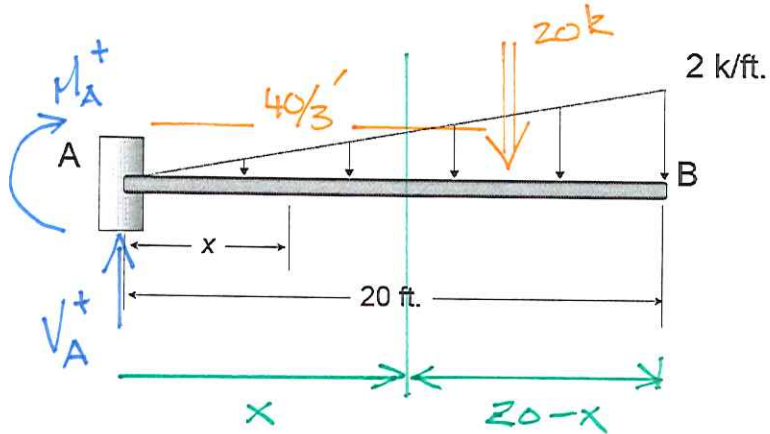


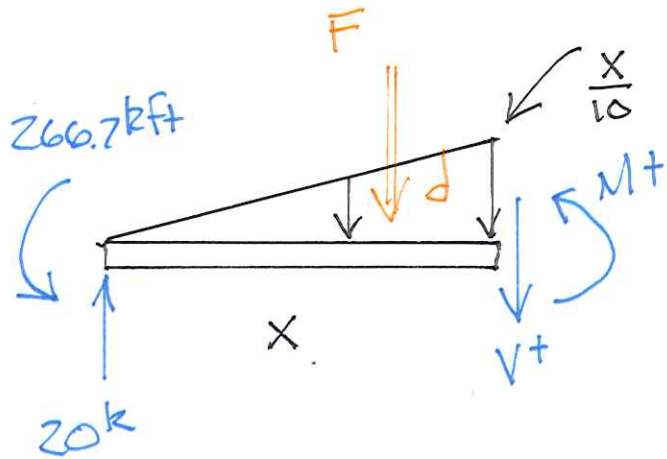
Example 4b-1 - Determine the internal shear and bending moment as a function of x .



$$\sum M_A = 0 = -M_A - 20^k \left(\frac{40}{3} \right) \quad M_A = -266.7 \text{ kft}$$

$$\sum F_y = 0 = V_A - 20^k \quad V_A = 20^k$$

SLOPE $\frac{2 \text{ k/ft}}{20'} = \frac{1}{10}$



$$F = \frac{1}{2}(x) \frac{x}{10} = \frac{x^2}{20}$$

$$d = \frac{x}{3}$$

$$\sum M_{cut} = 0 = M + \frac{x^2}{20} \left(\frac{x}{3} \right) - 20^k(x) + 266.7 \text{ kft}$$

$$M(x) = \left[-\frac{x^3}{60} + 20x - 266.7 \right] \text{ kft}$$

$$\sum F_y = 0 = -V - \frac{x^2}{20} + 20^k$$

$$V(x) = \left[-\frac{x^2}{20} + 20 \right] \text{ k}$$

$$\frac{dM}{dx} = V$$