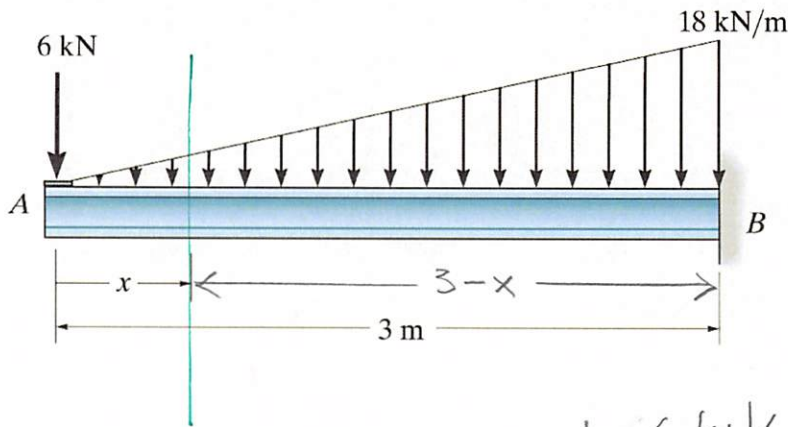
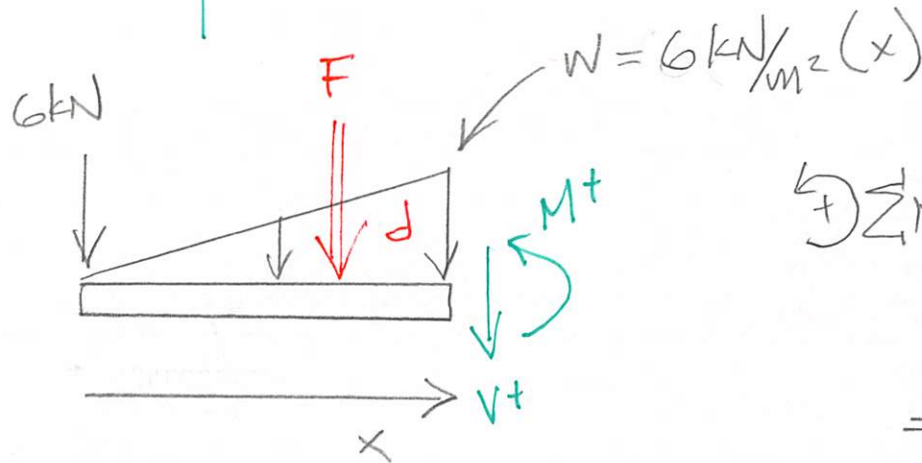


Example 4b-1 - Determine the internal shear and bending moment as a function of x .



$$W = Ax + B \quad A \Rightarrow \text{SLOPE} = \frac{18 \text{ kN/m} - 0}{3 \text{ m}} = 6 \text{ kN/m}^2$$

$$\sum F_y = 0 \Rightarrow V = -6 \text{ kN}$$



$$\sum M_{\text{cut}} = 0 = M + (3x^2)\left(\frac{x}{3}\right) + 6x$$

$$\underline{\underline{M = [-x^3 - 6x] \text{ kNm}}}$$

$$M(x=0) = 0 \quad \checkmark$$

$$M(x=3\text{m}) = -36 \text{ kNm}$$

$$F = \frac{1}{2}(x)6x = 3x^2$$

$$d = \frac{1}{3}(x)$$

$$+\uparrow \sum F_y = 0 = -V - 3x^2 - 6 \text{ kN}$$

$$\underline{\underline{V = [-3x^2 - 6] \text{ kN}}}$$

$$V(x=0) = -6 \text{ kN} \quad \checkmark$$

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