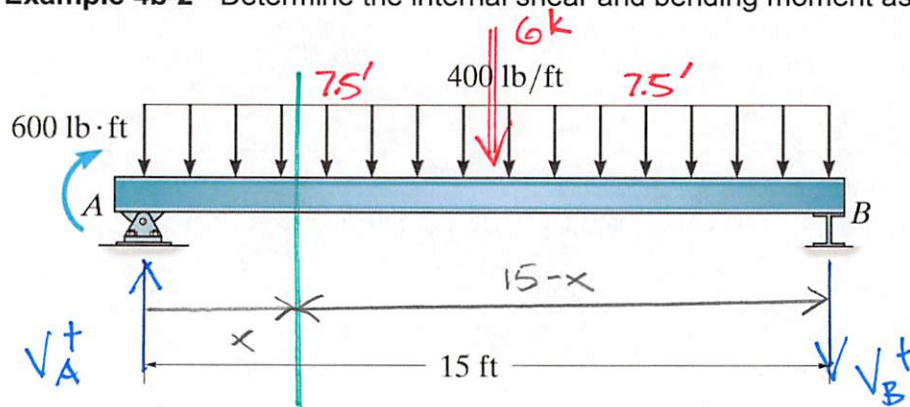


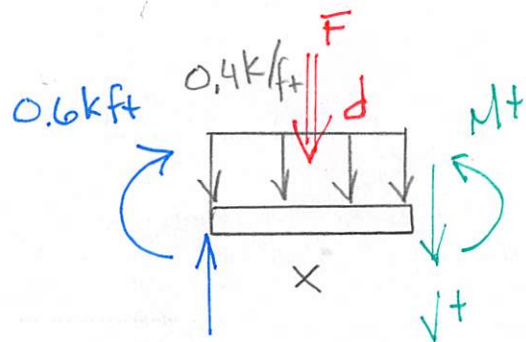
Example 4b-2 - Determine the internal shear and bending moment as a function of x .



$$\circlearrowleft \sum M_B = 0 = 6^k(7.5') - 0.6 \text{ kft} - V_A(15')$$

$$\underline{V_A = 2.96 \text{ k}}$$

$$+\uparrow \sum F_y = 0 = V_A - V_B - 6^k \quad \underline{V_B = -3.04 \text{ k}}$$



$$\circlearrowleft \sum M_{\text{CUT}} = 0 = M + 0.4x\left(\frac{x}{2}\right) - 2.96x - 0.6 \text{ kft}$$

$$\underline{\underline{M(x) = [-0.2x^2 + 2.96x + 0.6] \text{ kft}}}$$

$$M(x=15') = 0 \quad \checkmark$$

$$M(x=0) = 0.6 \text{ kft} \quad \checkmark$$

$$+\uparrow \sum F_y = 0 = -V - 0.4x + 2.96$$

$$\underline{\underline{V(x) = [-0.4x + 2.96] \text{ k}}}$$

$$V(x=0) = 2.96 \text{ k} \quad \checkmark$$

$$V(x=15') = -3.04 \text{ k} \quad \checkmark$$

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

$$F = 0.4x$$

$$d = \frac{1}{2}x$$