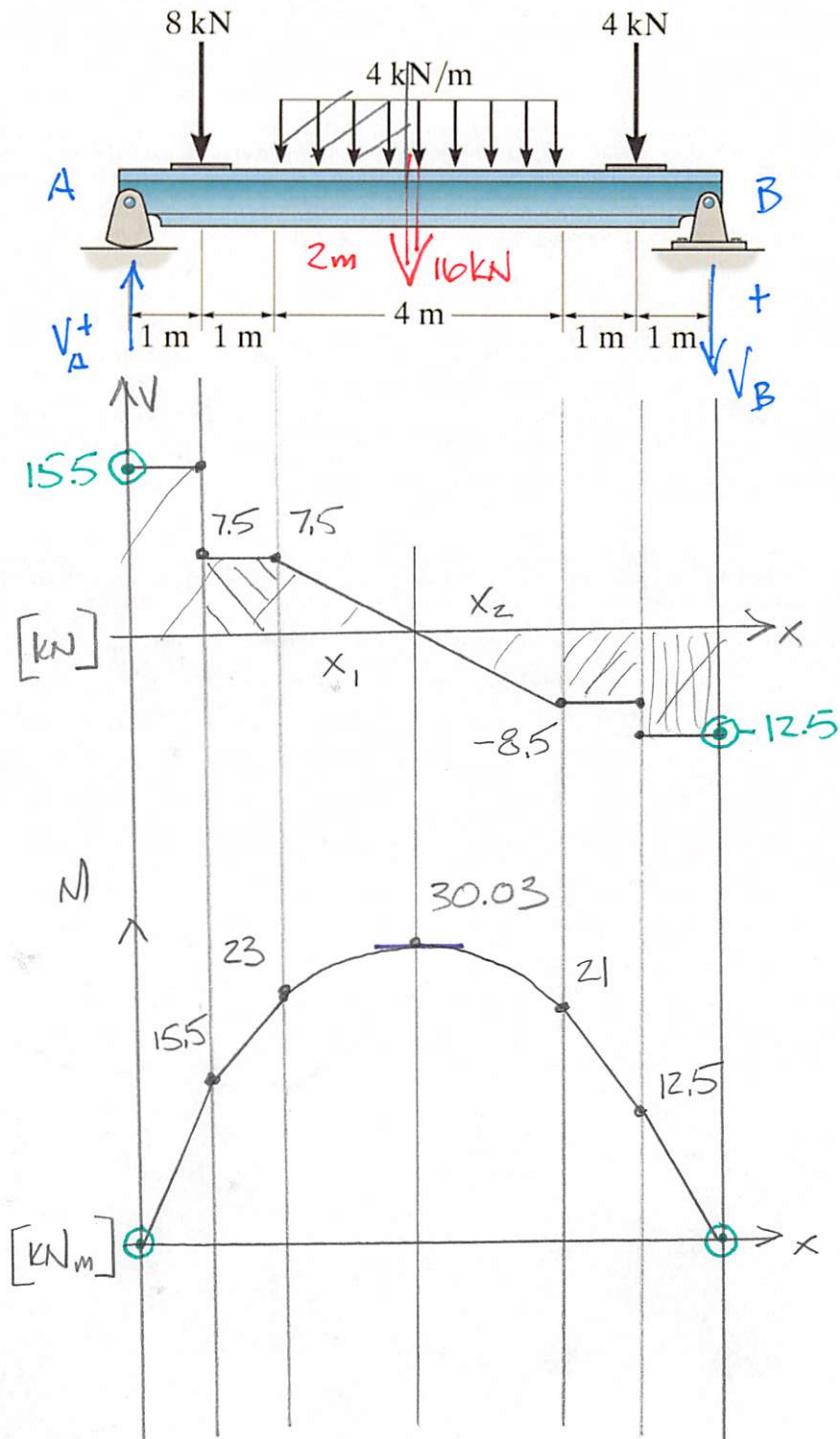


Example 4c-7 – Construct the shear force and bending moment diagrams.



$$\sum M_B = 0 = 4 \text{ kN}(1\text{m}) + 16 \text{ kN}(4\text{m}) + 8 \text{ kN}(7\text{m}) - V_A(8\text{m})$$

$$\underline{V_A = 15.5 \text{ kN}}$$

$$\sum F_y = 0 = V_A - V_B - 8 \text{ kN} - 4 \text{ kN} - 16 \text{ kN}$$

$$\underline{V_B = -12.5 \text{ kN}}$$

$$\Delta V = \int w dx \quad \frac{dV}{dx} = w \quad \Delta V = P$$

$$\downarrow \quad \downarrow$$

$$-7.5 \text{ kN} = -4 \text{ kN/m} x_1 \quad \underline{x_1 = 1.875 \text{ m}}$$

$$\underline{x_2 = 2.125 \text{ m}}$$

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

$$\underline{M_{\text{MAX}} = 30.03 \text{ kNm} @ x = 3.875 \text{ m}}$$