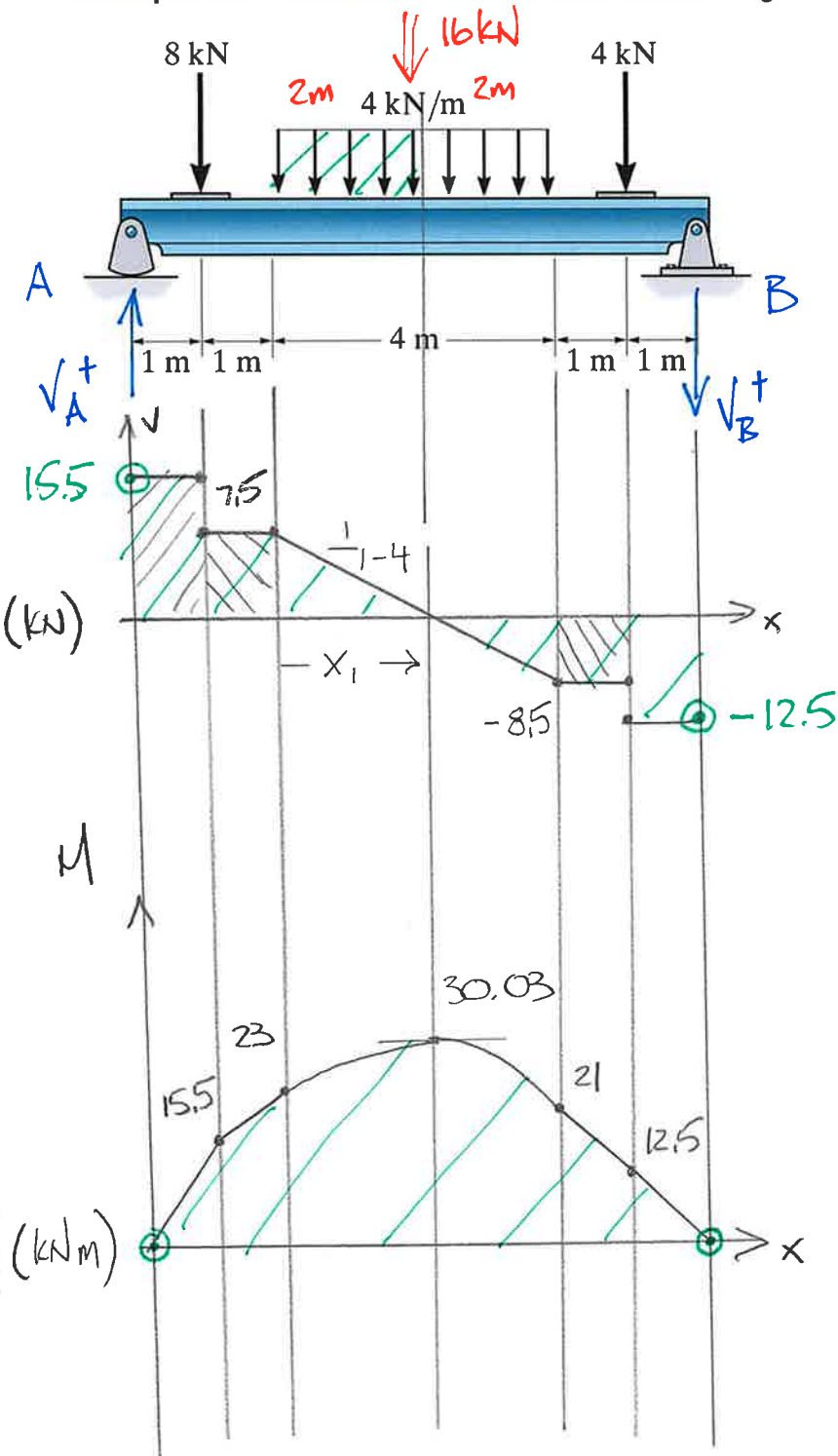


Example 4c-7 – Construct the shear force and bending moment diagrams.



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

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

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

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

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

$$\Delta V = -7.5 \text{ kN} \quad \int w dx = -4x_1$$

$$-4x_1 = -7.5 \quad \underline{x_1 = 1.875 \text{ ft}}$$

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

$$M_{MAX} = 30.03 \text{ kNm} @ 3.875 \text{ ft FROM A}$$