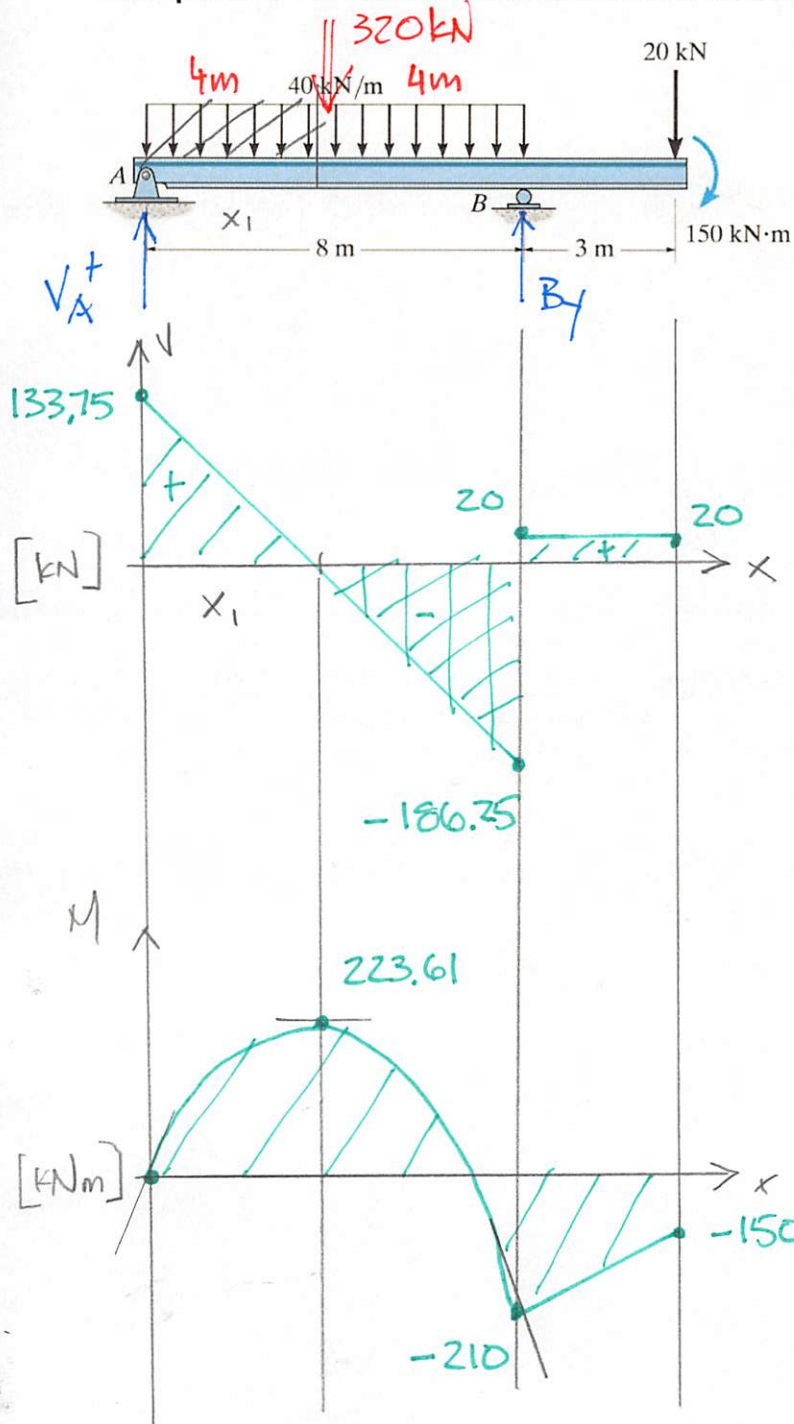


Example 4c-8 – Construct the shear force and bending moment diagrams



$$\sum M_B = 0 = -20 \text{ kN}(3 \text{ m}) + 320 \text{ kN}(4 \text{ m}) - 150 \text{ kN}\cdot\text{m} - V_A(8 \text{ m})$$

$$\underline{V_A = 133.75 \text{ kN}}$$

$$\sum F_y = 0 = V_A + B_y - 320 \text{ kN} - 20 \text{ kN}$$

$$\underline{V_B = 206.25 \text{ kN}}$$

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

$$\parallel$$

$$-133.75 \text{ kN} = -40 x_1$$

$$x_1 = \frac{133.75 \text{ kN}}{40 \text{ kN/m}} = 3.34 \text{ m}$$

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

$$\underline{M_{\text{MAX}} = 223.61 \text{ kN}\cdot\text{m} @ x = 3.34 \text{ m}}$$