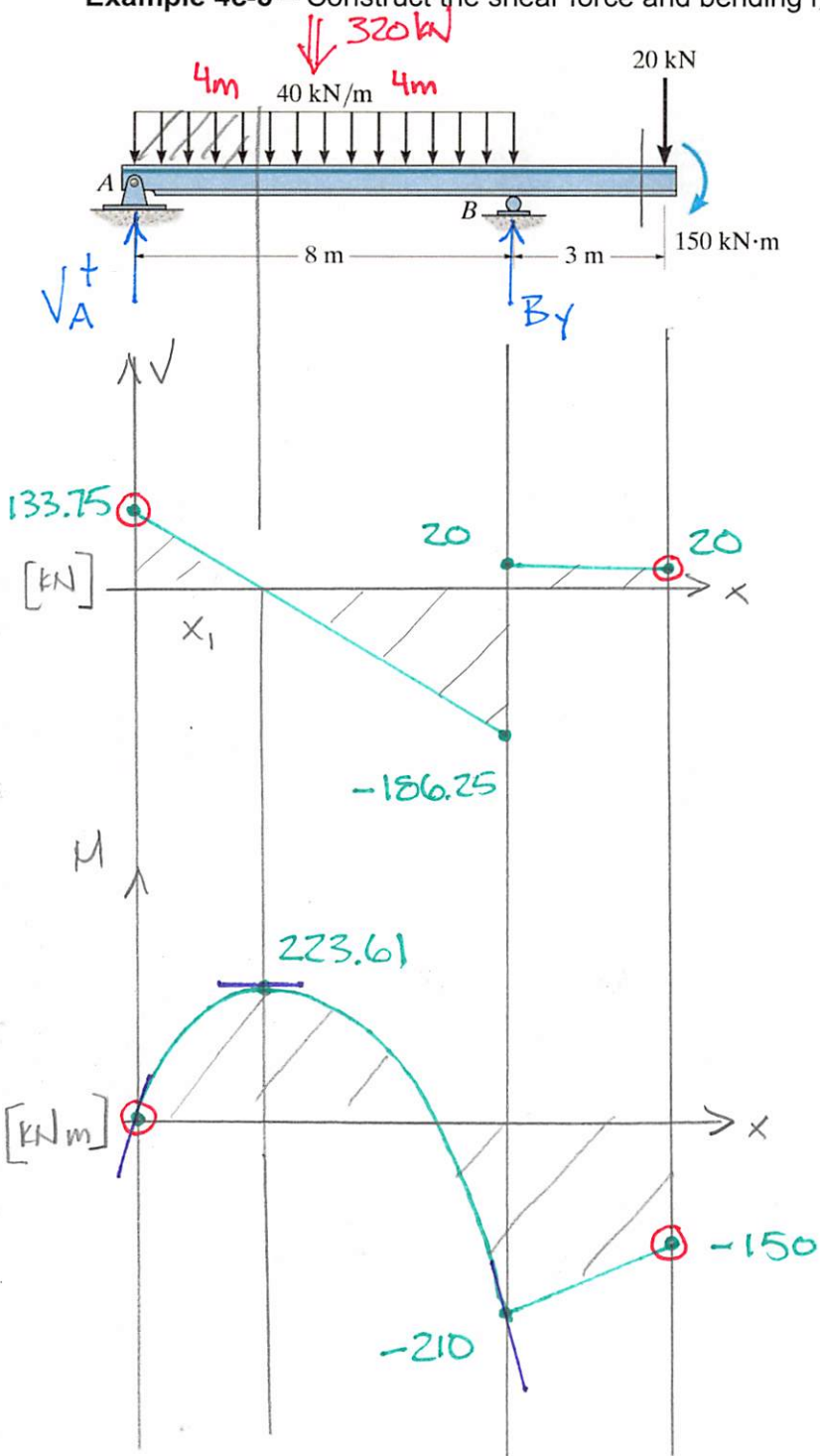


Example 4c-8 – Construct the shear force and bending moment diagrams



$$\sum M_A = 0 = -320 \text{ kN}(4 \text{ m}) - 20 \text{ kN}(11 \text{ m}) - 150 \text{ kN}\cdot\text{m} + B_y(8 \text{ m})$$

$$B_y = 206.25 \text{ kN}$$

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

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

$$\sum F_y = 0 = V - 20 \text{ kN} \quad V = 20 \text{ kN}$$

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

$$-133.75 \text{ kN} = -40 \text{ kN/m}(x_1) \quad x_1 = 3.34 \text{ m}$$

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

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