



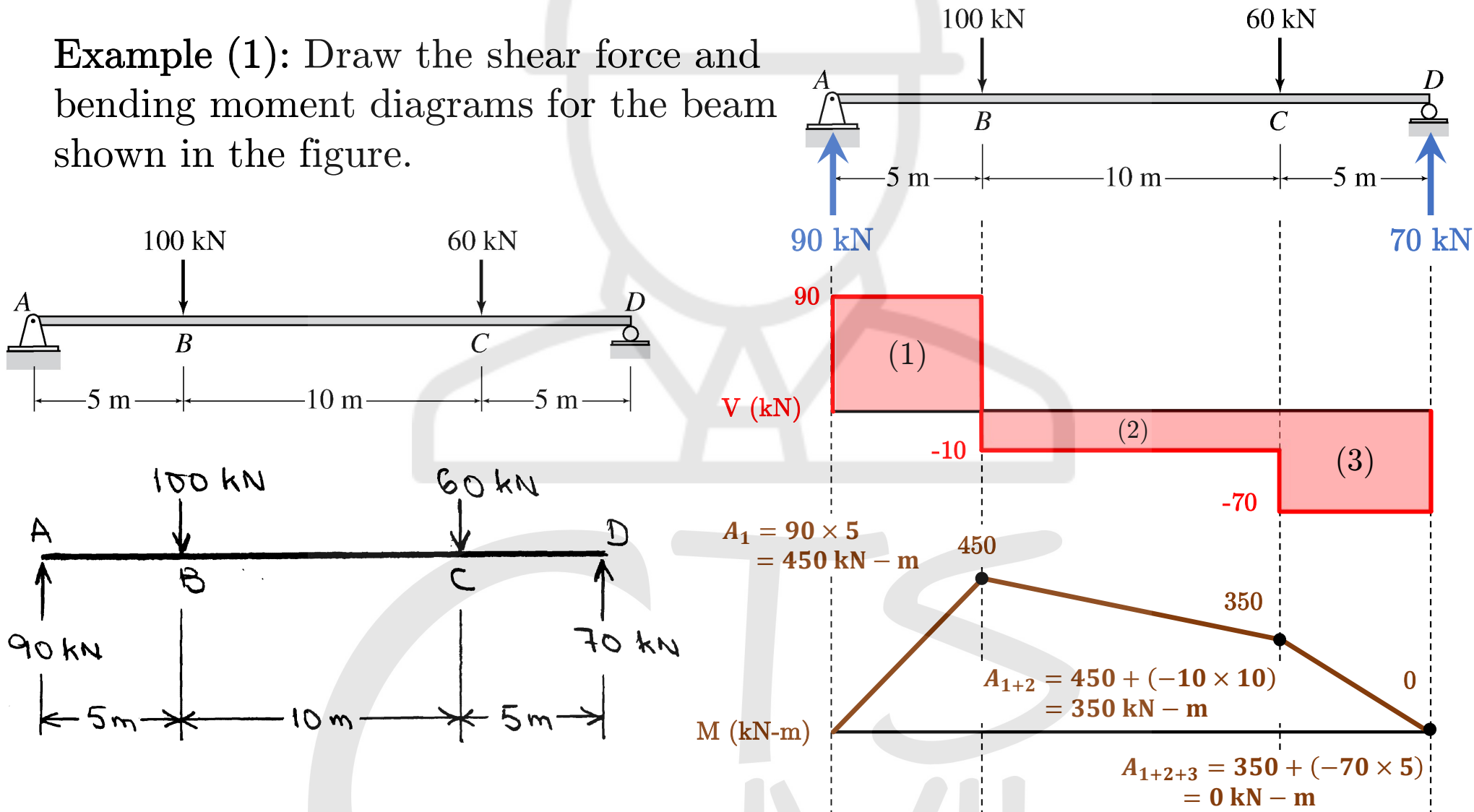
College of Technological Studies  
Department of Civil Engineering Technology

## CE 278 Structural Analysis

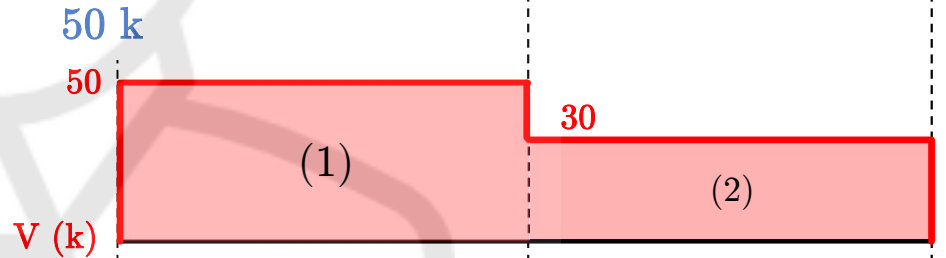
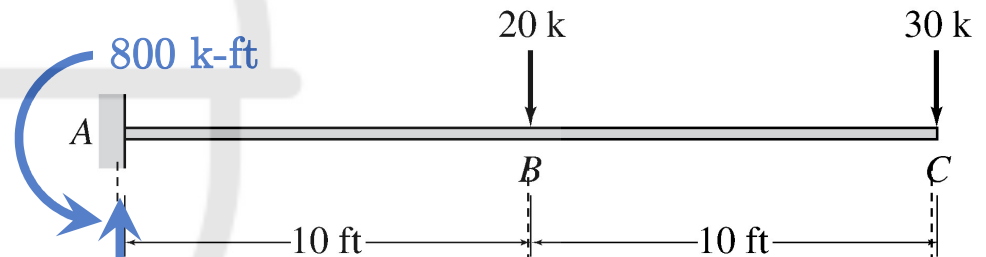
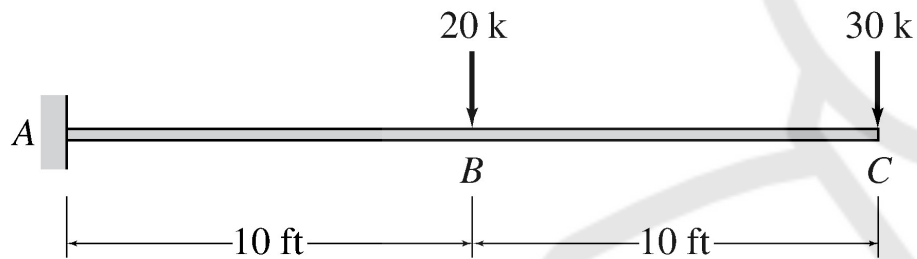
Tutorial (3)

# Shear Force and Bending Moment Diagrams

**Example (1):** Draw the shear force and bending moment diagrams for the beam shown in the figure.

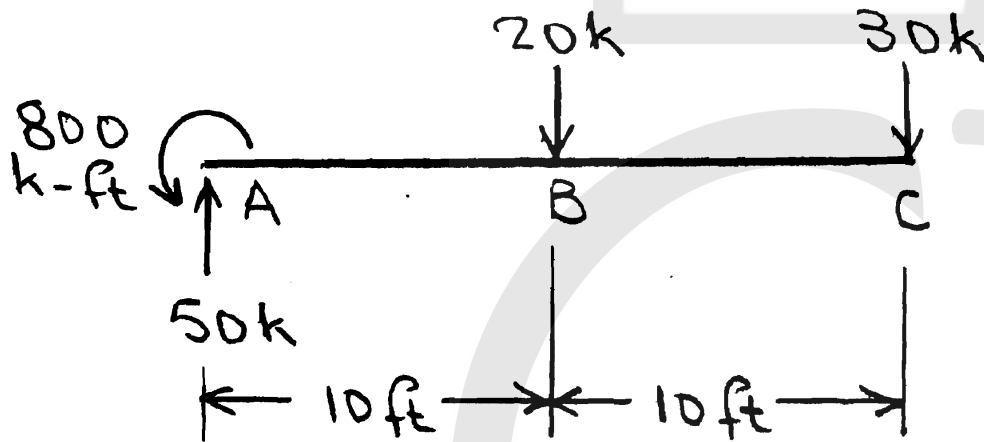
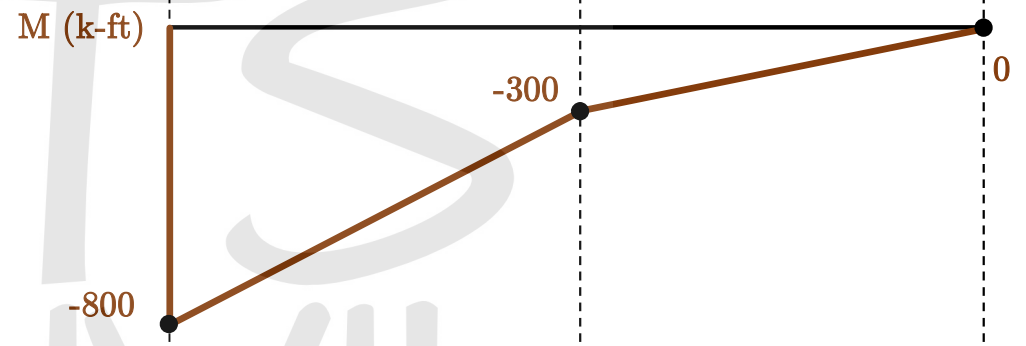


Example (2): Draw the shear force and bending moment diagrams for the beam shown in the figure.

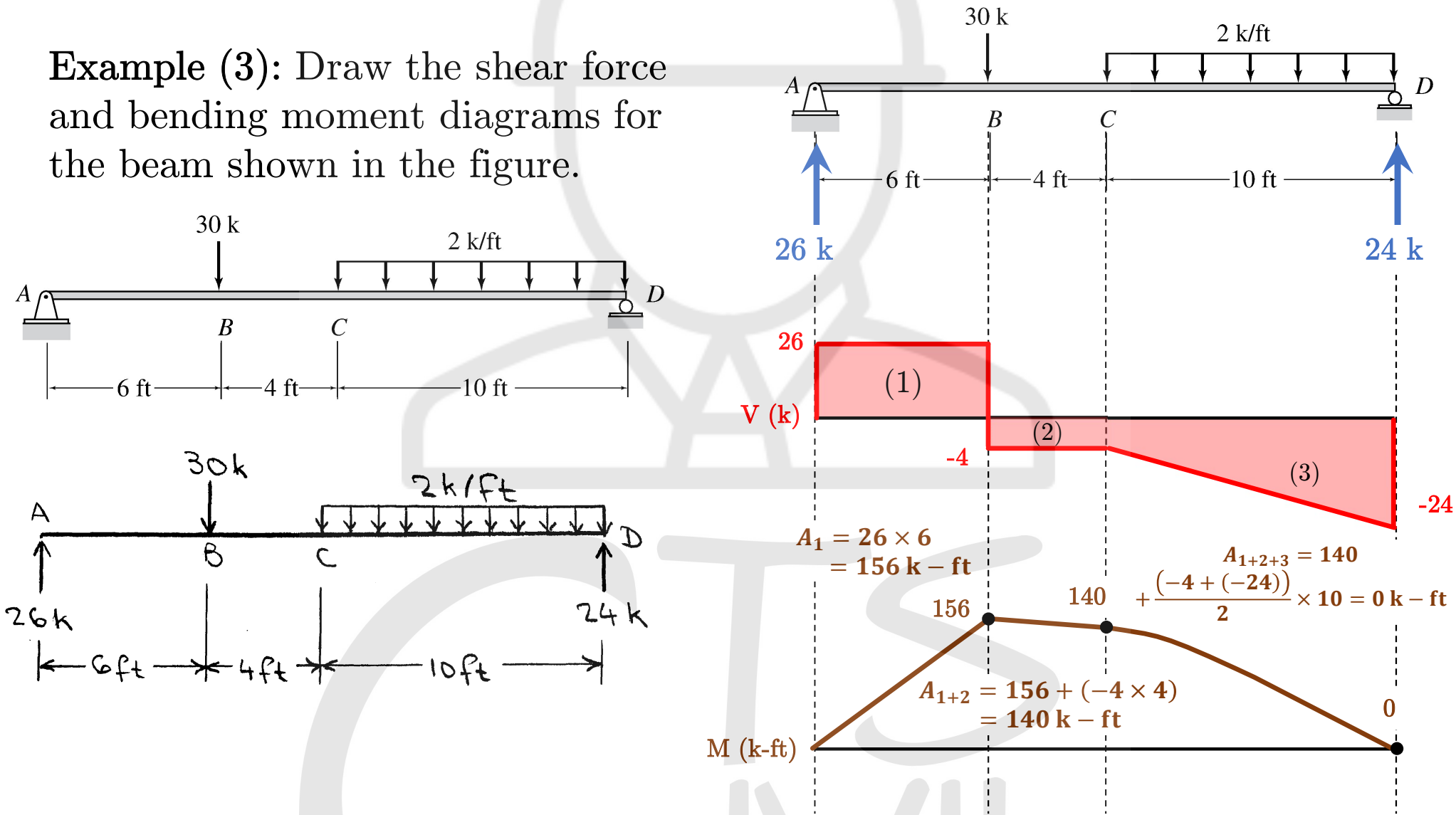


$$A_1 = -800 + (50 \times 10) = -300 \text{ k-ft}$$

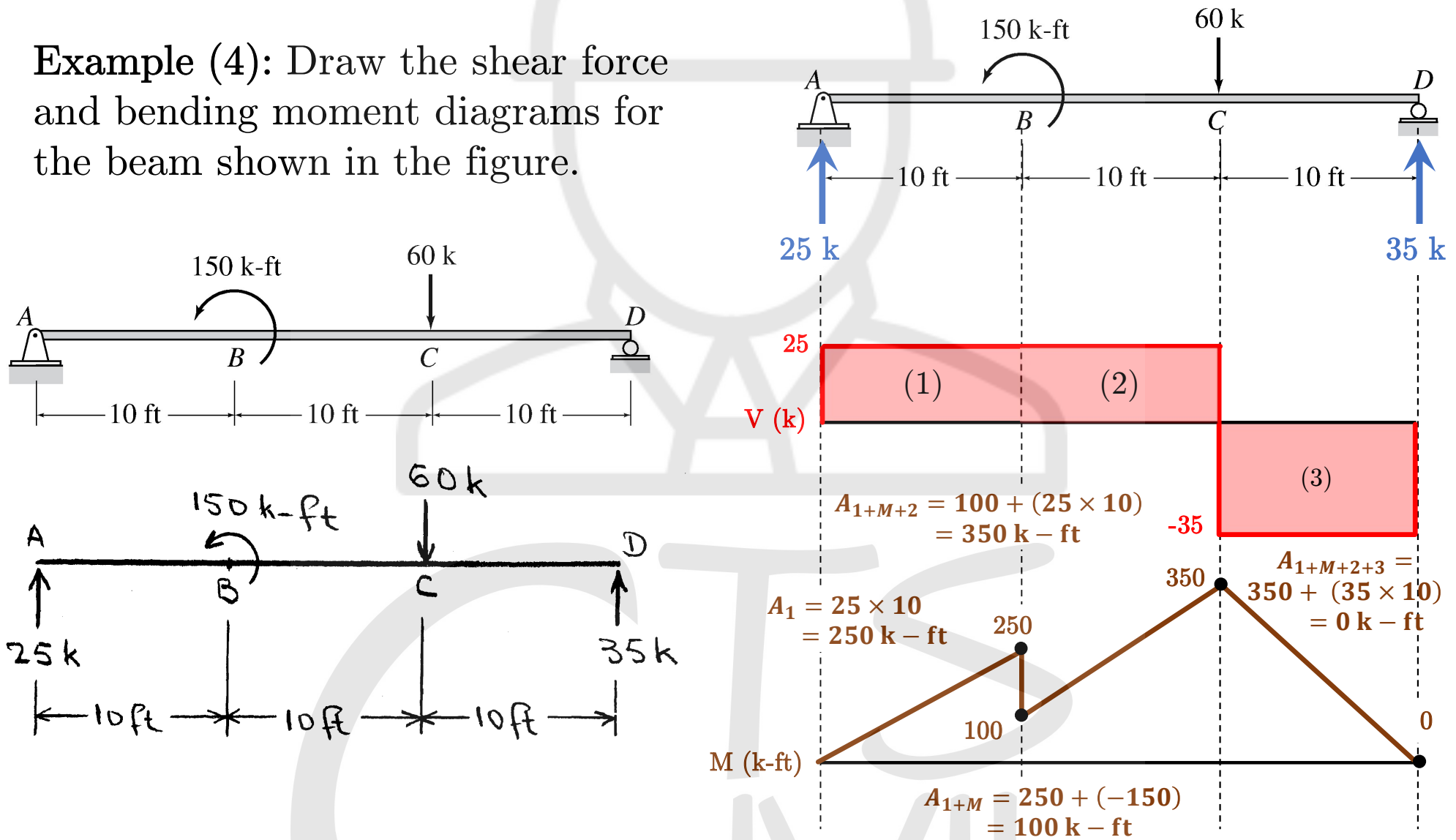
$$A_{1+2} = -300 + (30 \times 10) = 0 \text{ k-ft}$$



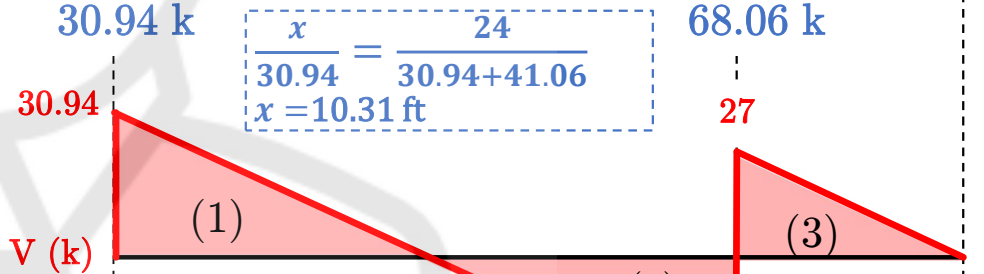
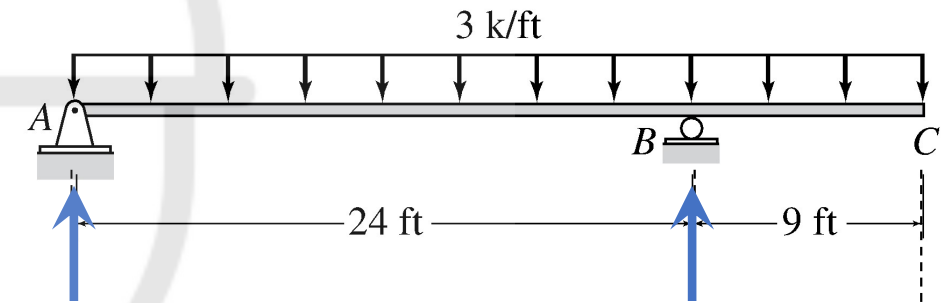
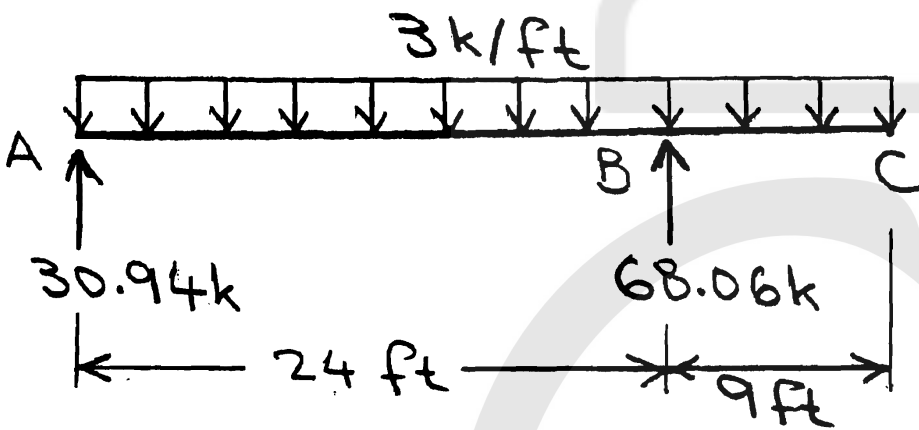
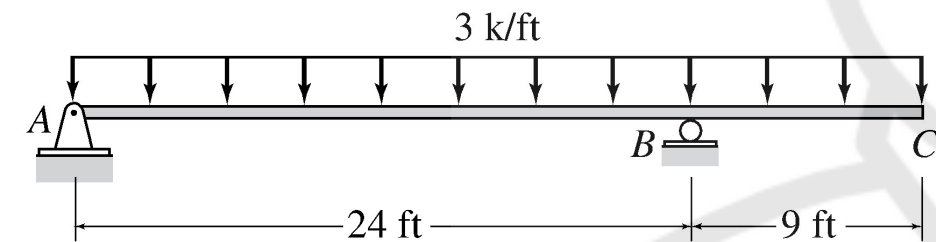
**Example (3):** Draw the shear force and bending moment diagrams for the beam shown in the figure.



**Example (4):** Draw the shear force and bending moment diagrams for the beam shown in the figure.



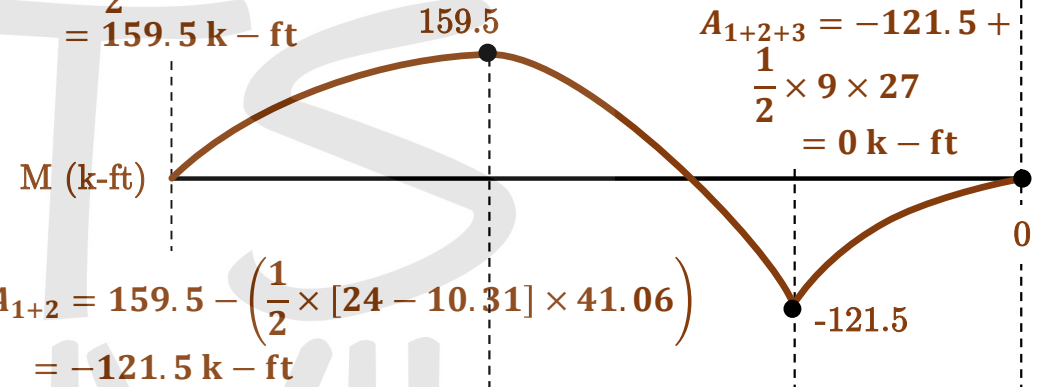
**Example (5):** Draw the shear force and bending moment diagrams for the beam shown in the figure.



$$A_1 = \frac{1}{2} \times 10.31 \times 30.94 = 159.5 \text{ k-ft}$$

$$A_{1+2+3} = -121.5 + \frac{1}{2} \times 9 \times 27 = 0 \text{ k-ft}$$

$$A_{1+2} = 159.5 - \left( \frac{1}{2} \times [24 - 10.31] \times 41.06 \right) = -121.5 \text{ k-ft}$$





Questions?