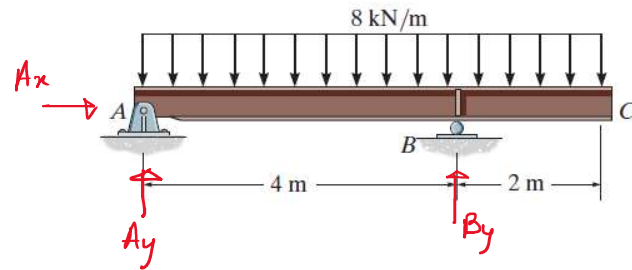


## Shear and Moment diagram of Beams. Question 6-6 solution

Sunday, 9 March, 2025 05:56 PM

6-6. Draw the shear and moment diagrams for the overhang beam.

6-6. Draw the shear and moment diagrams for the overhang beam.



$$\sum M_A = 0$$

$$(8 \text{ kN/m} \times 6 \text{ m} \times \frac{6 \text{ m}}{2}) - (B_y \times 4 \text{ m}) = 0$$

*Solved by*

$$\Rightarrow B_y = 36 \text{ kN}$$

$\sum F_x = 0$

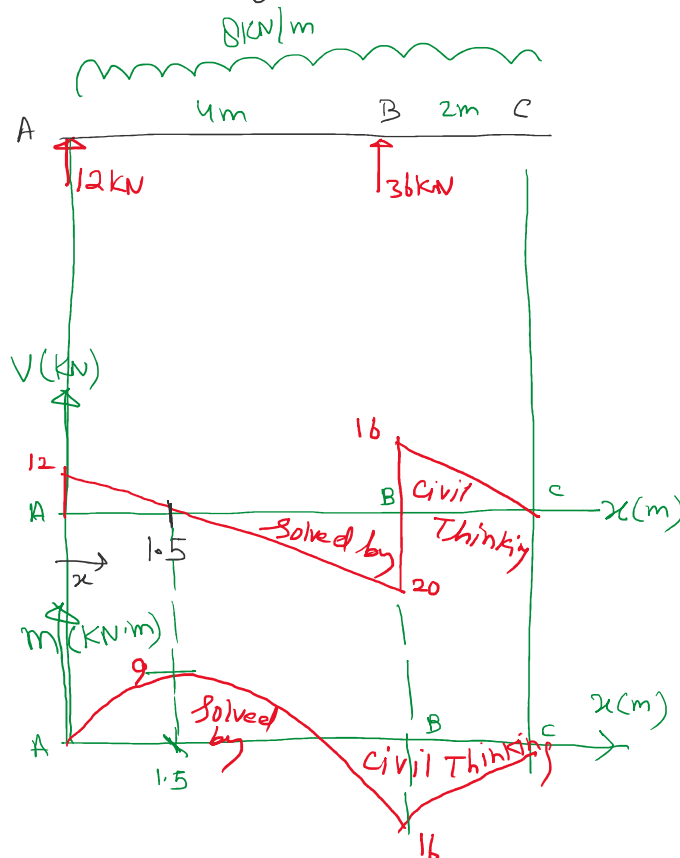
$$\Rightarrow A_x = 0$$

*Civil Thinking*

$$\sum F_y = 0 :$$

$$A_y + B_y - (8 \text{ kN/m} \times 6 \text{ m}) = 0$$

$$\Rightarrow A_y = 8 \times 6 - 36 = 12 \text{ kN}$$



$$V_A = 12$$

$$V_B^- = 12 - (8 \times 4) = -20 ; V_B^+ = 16$$

$$V_C = 0$$

$$V_x = 0 \Rightarrow 12 - 8x = 0 \Rightarrow x = 1.5$$

$$M_A = 0 ;$$

$$M_{x=1.5} = 12 \times 1.5 - \left( 8 \times \frac{1.5^2}{2} \right) = 9$$

$$M_B = -(8 \times 2) = -16$$

$$M_C = 0$$

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