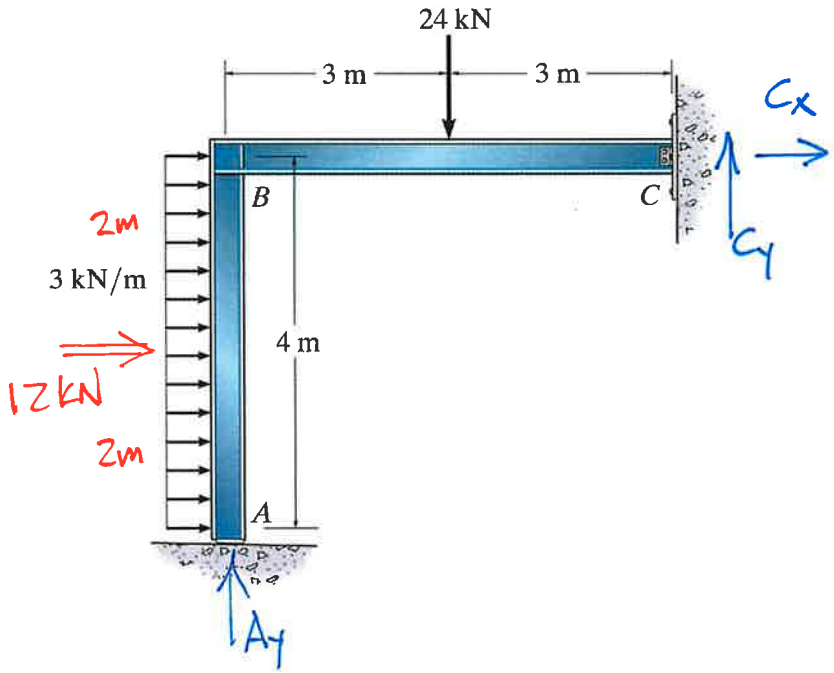
Example 4d-3: Draw the shear and moment diagrams for the following frame:



$$\circlearrowleft +\Sigma M_C = 0 = 24\text{kN}(3\text{m}) + 12\text{kN}(2\text{m}) - A_y(6\text{m})$$

$$A_y = 16\text{kN}$$

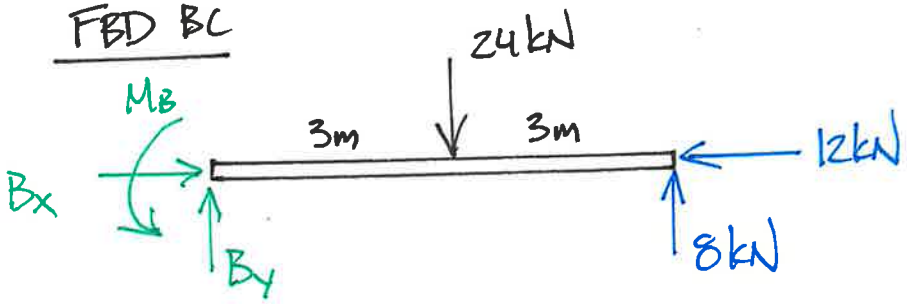
$$+\uparrow \Sigma F_y = 0 = A_y + C_y - 24\text{kN}$$

$$C_y = 8\text{kN}$$

$$\rightarrow + \Sigma F_x = 0 = C_x + 12\text{kN}$$

$$C_x = -12\text{kN}$$

FBD BC



$$\circlearrowleft +\Sigma M_B = 0 = M_B - 24\text{kN}(3\text{m}) + 8\text{kN}(6\text{m})$$

$$M_B = 24\ \text{kNm}$$

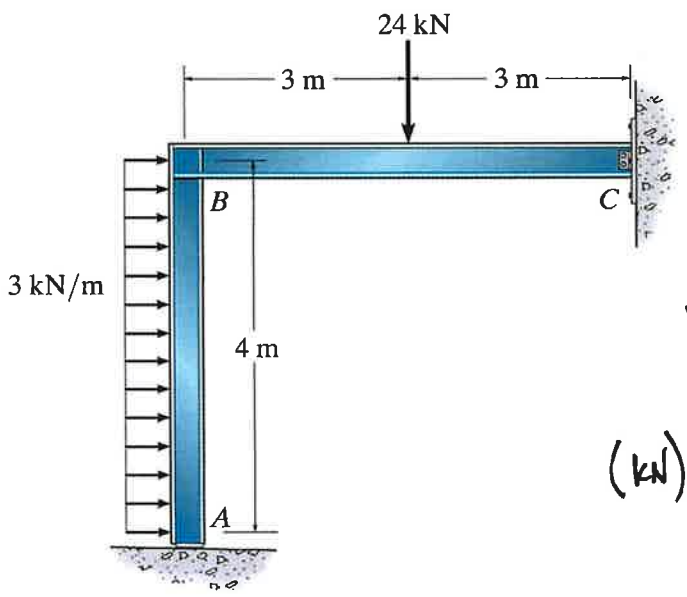
$$+\uparrow \Sigma F_y = 0 = B_y + 8\text{kN} - 24\text{kN}$$

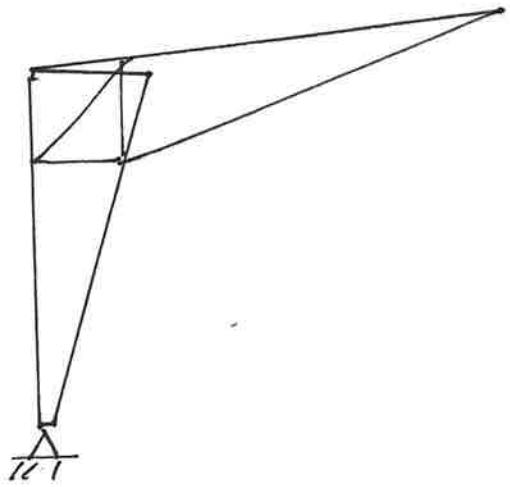
$$B_y = 16\text{kN}$$

$$\rightarrow + \Sigma F_x = 0 = B_x - 12\text{kN}$$

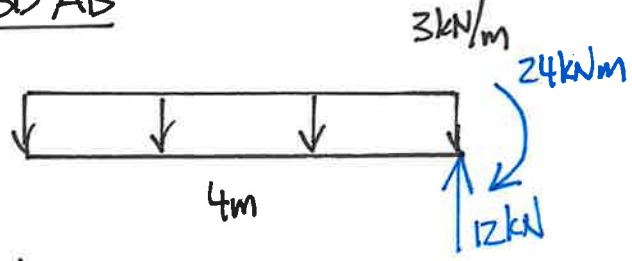
$$B_x = 12\text{kN}$$

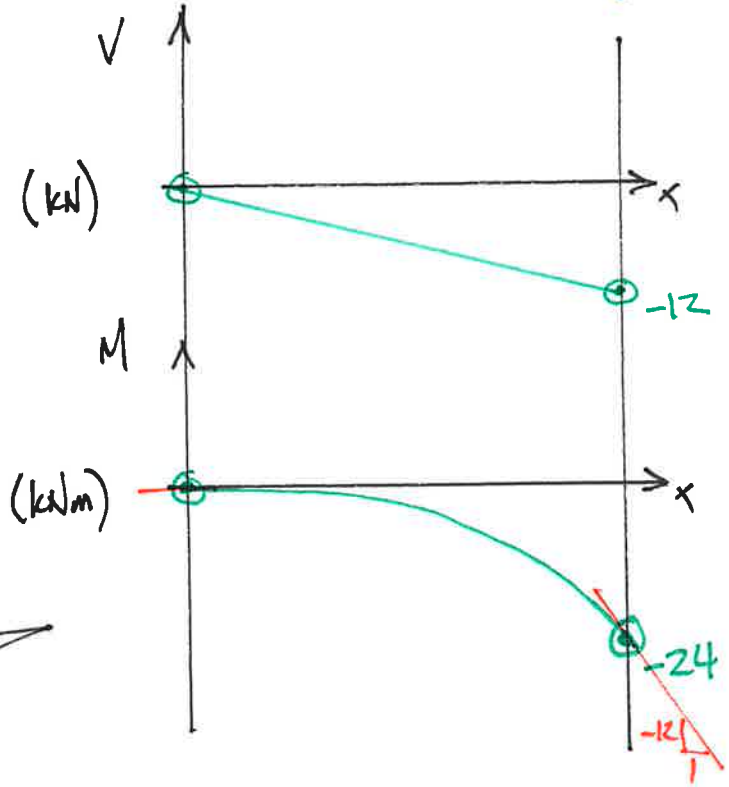
Example 4d-3: Draw the shear and moment diagrams for the following frame:





FBD AB





FBD BC