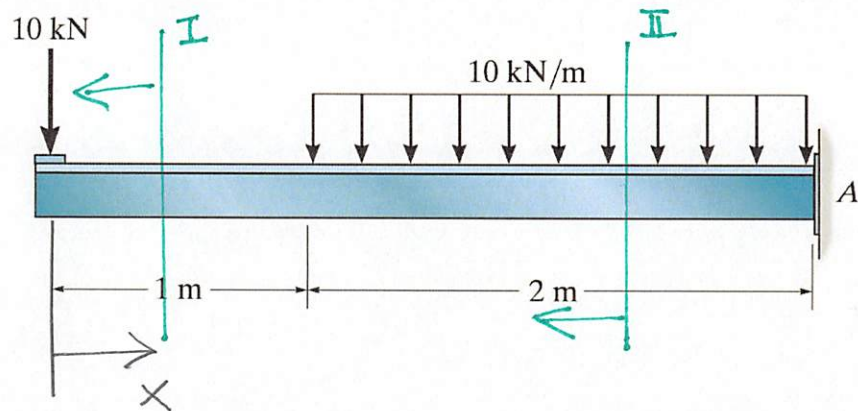
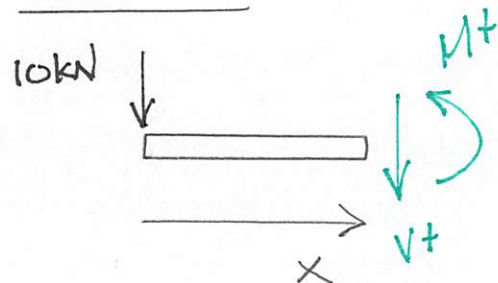


Example 4b-3 - Determine the internal shear and bending moment as a function of x .



$0 \leq x \leq 1\text{ m}$

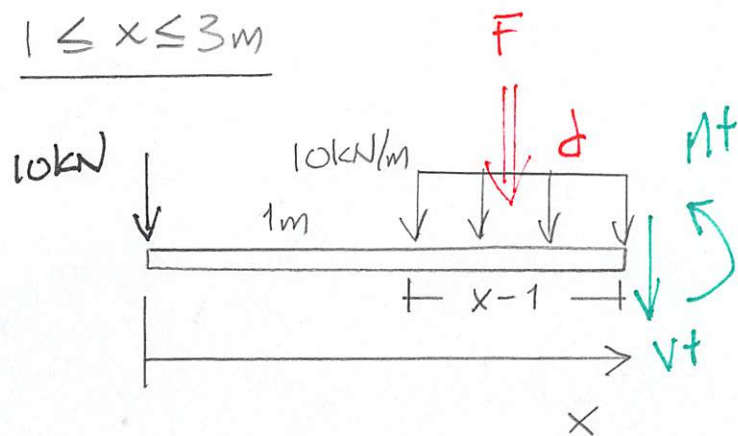


$$\sum \mathcal{M}_{\text{cut}} = 0 = M + 10x$$

$$+\uparrow \sum F_y = 0 = -V - 10\text{ kN}$$

$$\left[\begin{array}{l} \underline{M(x) = [-10x] \text{ kNm}} \\ M(x=0) = 0 \checkmark \\ \underline{V(x) = -10\text{ kN}} \end{array} \right.$$

$1 \leq x \leq 3\text{ m}$



$$F = 10(x-1) \quad d = \frac{1}{2}(x-1)$$

$$\sum \mathcal{M}_{\text{cut}} = 0 = M + 10(x-1)\frac{1}{2}(x-1) + 10x$$

$$\underline{M(x) = [-5(x-1)^2 - 10x] \text{ kNm}}$$

$$M_I(x=1) = M_{II}(x=1) \checkmark$$

$$+\uparrow \sum F_y = 0 = -V - 10(x-1) - 10\text{ kN}$$

$$\underline{\underline{V(x) = [-10(x-1) - 10] \text{ kN}}}$$