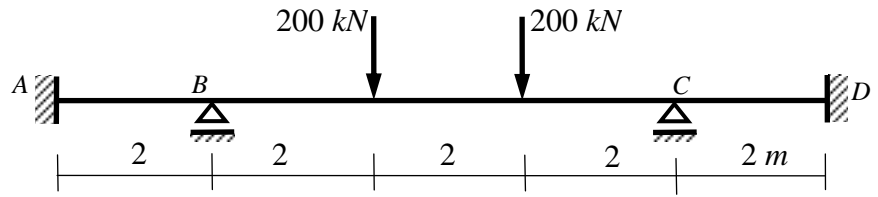


الكود:

الإسم:

Answer of Quiz: (5 Marks)

Using the three-moment equation, draw the shear force and bending moment diagrams for the shown beam due to the given loads.



Solution:

- Applying three-moment equation at A

$$2M_A(2) + M_B(2) = -6r_b = -6(0)$$

$$2M_A + M_B = 0 \quad \dots (1)$$

- Applying three-moment equation at B

$$M_A(2) + 2M_B(2+2) + M_C(2) = -6r_b = -6(800)$$

But from symmetry $M_C = M_B$

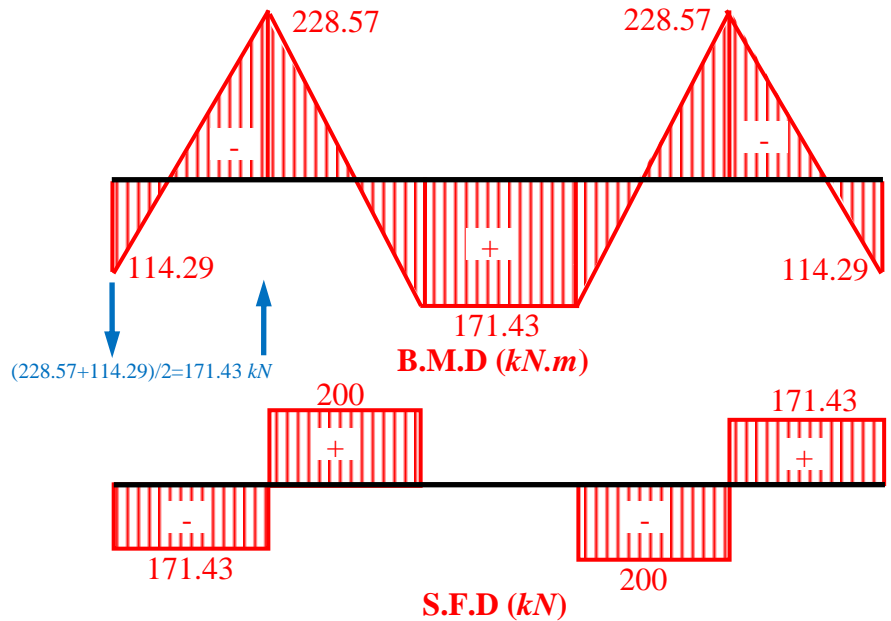
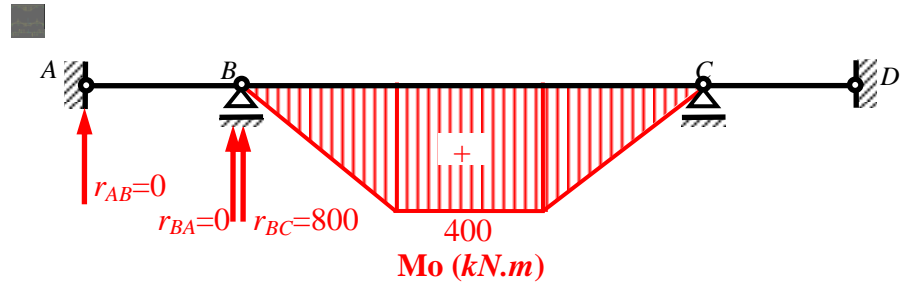
Then,

$$2M_A + 22M_B = -4800 \quad \dots (2)$$

- From Eqs. (1) & (2) →

$$M_A = -1600/7 = -228.57 \text{ kN.m}$$

and $M_B = 800/7 = 114.29 \text{ kN.m}$



With my best wishes
Dr. M. Abdel-Kader