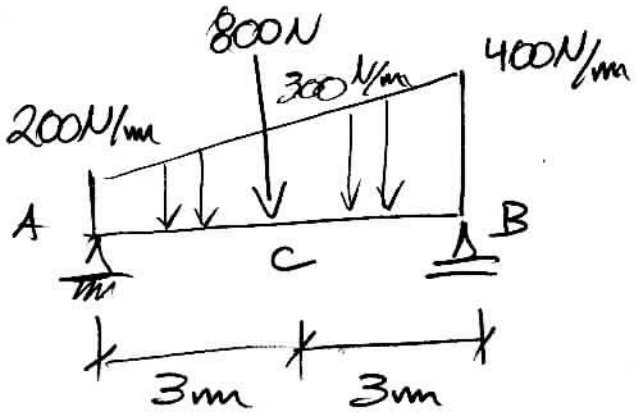
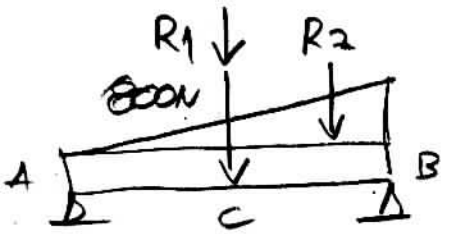
TE1-3.7



$$q_{AC}(x_1) = \frac{300-200}{3} x_1 + 200$$

$$q_{AC}(x_1) = \frac{100}{3} x_1 + 200$$

$$q_{CB}(x_2) = \frac{100}{3} x_2 + 300$$



$$R_1 = 200 \times 6 = 1200\ N$$

$$R_2 = 200 \times 6 \times \tfrac{1}{2} = 600\ N$$

$$\oplus \circlearrowleft \Sigma M_A = 0 \quad (800+1200)\times 3 + 600 \times \tfrac{2}{3} \times 6 - V_B \times 6 = 0$$

$$V_B = \tfrac{1}{6}(2000 \times 3 + 2400) = 1400\ N$$

$$\oplus \uparrow \Sigma F_V = 0 \quad -800 - 1200 - 600 + 1400 + V_A = 0$$

$$V_A = 800 + 1200 + 600 - 1400 = 1200\ N$$

$$Q_{AC}(x_1) = -\int q_{AC}(x_1)\,dx = -\frac{100}{3}\frac{x_1^2}{2} - 200x_1 + C_1$$

COMO $Q_{AC}(x_1 = 0) = 1200\ N \quad C_1 = 1200$

$$Q_{AC}(x_1) = -\frac{100}{6}x_1^2 - 200x_1 + 1200$$

$$M_{AC}(x_1) = \int Q_{AC}(x_1)\,dx = -\frac{100}{6}\frac{x_1^3}{3} - 200\frac{x_1^2}{2} + 1200x_1 + C_2$$

COMO $M_{AC}(x_1 = 0) = 0 \quad C_2 = 0$

$$M_{AC}(x_1) = -\frac{100}{18}x_1^3 - 100x_1^2 + 1200x_1$$

(=)

$$Q_C^{ESQ} = -\frac{100}{6} \cdot 3^2 - 200 \cdot 3 + 1200 = 450N$$

$$M_C^{ESQ} = -\frac{100}{18} \cdot 3^3 - 100 \cdot 3 + 1200 \cdot 3 = 2550 Nm$$

$$Q_{BC}(x_2) = -\int q(x_2)\,dx = -\frac{100}{3} x_2^2/2 - 300x_2 + C_1$$

COMO $Q_{BC}(x_2=0) = 450N - 800N = -350N$

$C_2 = -350$

$$Q_{BC}(x_2) = -\frac{50}{3} x_2^2 - 300x_2 - 350$$ //

$$M_{BC}(x_2) = \int Q_{BC}(x_2)\,dx = -\frac{50}{3} x_2^3/3 - 300 x_2^2/2 - 350x_2 + C_2$$

COMO $M_{BC}(x_2=0) = 2550 \quad C_2 = 2550$

$$M_{BC}(x_2) = -\frac{50}{9} x_2^3 - 150 x_2^2 - 350 x_2 + 2550$$ //