

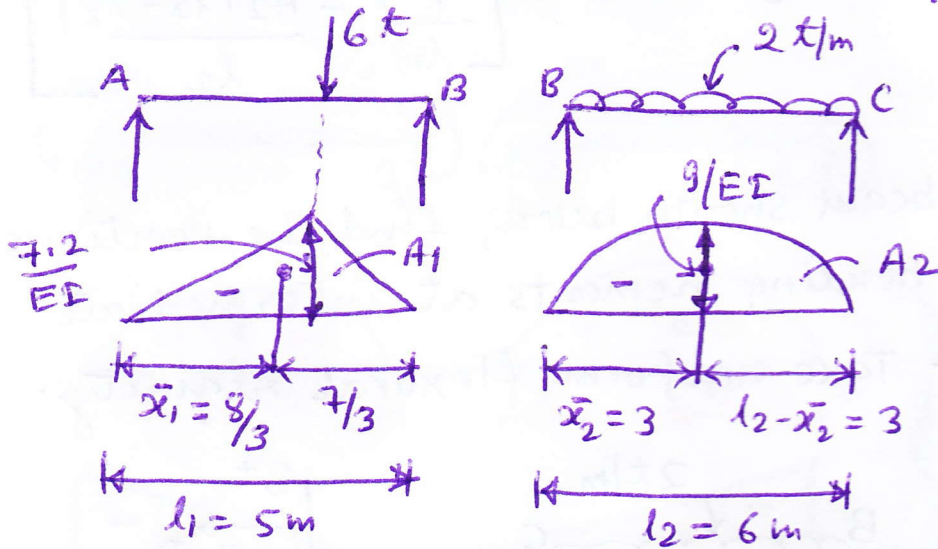
1) Simply supported bending moments

$$M_E = \frac{Wab}{l} = \frac{6 \times 3 \times 2}{5} = 7.2 \quad \begin{matrix} a = 3 \text{ m} \\ b = 2 \text{ m} \end{matrix}$$

$$M_G = \frac{wl^2}{8} = \frac{2 \times 6^2}{8} = 9$$

$$M_F = \frac{Wab}{l} = \frac{8 \times 3 \times 2}{5} = 9.6$$

2) Applying 3 moment equation between span AB & BC



$$M_A l_1 + 2 M_B (l_1 + l_2) + M_C l_2 = 6 EI \left[\frac{A_1 \bar{x}_1}{l_1} + \frac{A_2 (l_2 - \bar{x}_2)}{l_2} \right]$$

at Support A, $M_A = 0$ (discontinuous support)

$$0 + 2 M_B (5 + 6) + M_C \times 6 = 6 EI \left[-\frac{1}{2} \times 5 \times \frac{7.2}{EI} \times \frac{8}{3} \times \frac{1}{5} - \left(\frac{2}{3} \times 6 \times \frac{9}{EI} \right) \times 3 \times \frac{1}{6} \right]$$

Simplifying we get,

$$11 M_B + 3 M_C = - 82.8 \text{ ————— (1)}$$