MEEG 3013 Quiz #8
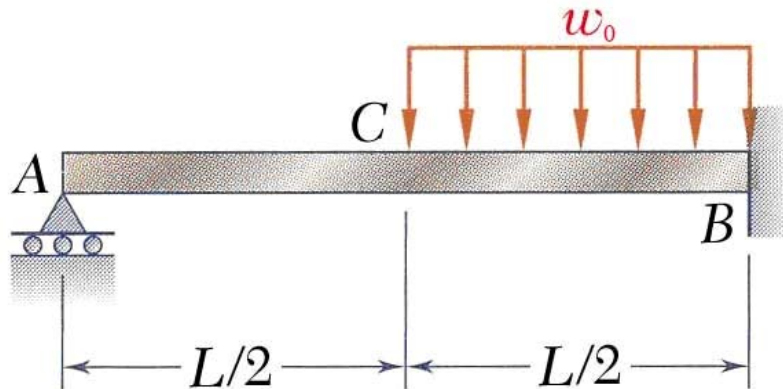
The beam shown has a constant flexural rigidity EI. Using **singularity functions**, determine for this beam (a) the reaction $\mathbf{A}_y$ at A, (b) the slope y'_A at A, (c) the slope y'_C at C, (d) the deflection y_C at C.

$$EIy = \frac{1}{6} A_y x^3 - \frac{1}{24} w_0 < x - \tfrac{L}{2} >^4 + C_1 x + C_2$$

$$A_y = \frac{7w_0 L}{128} \qquad C_1 = -\frac{5w_0 L^3}{768} \qquad C_2 = 0 \quad ②$$

$$\mathbf{A}_y = \frac{7w_0 L}{128} \uparrow \quad ② \qquad y'_A = -\frac{5w_0 L^3}{768EI} \quad ②$$

$$y'_C = \frac{w_0 L^3}{3072EI} \quad ② \qquad y_C = -\frac{13w_0 L^4}{6144EI} \quad ②$$