# **Excerpt** from the **Method of Model Formulas**

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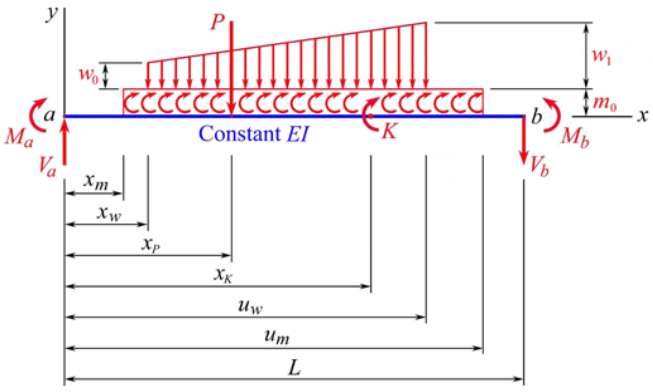
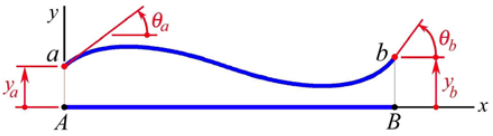



*(a)*




*(b)*

Positive directions of forces, moments, slopes, and deflections

$$y' = \theta_a + \frac{V_a}{2EI}x^2 + \frac{M_a}{EI}x - \frac{P}{2EI}<x-x_P>^2 + \frac{K}{EI}<x-x_K>^1 - \frac{w_0}{6EI}<x-x_w>^3 - \frac{w_1-w_0}{24EI(u_w-x_w)}<x-x_w>^4 + \frac{w_1}{6EI}<x-u_w>^3 + \frac{w_1-w_0}{24EI(u_w-x_w)}<x-u_w>^4 + \frac{m_0}{2EI}<x-x_m>^2 - \frac{m_0}{2EI}<x-u_m>^2 \quad (1)$$

$$y = y_a + \theta_a x + \frac{V_a}{6EI}x^3 + \frac{M_a}{2EI}x^2 - \frac{P}{6EI}<x-x_P>^3 + \frac{K}{2EI}<x-x_K>^2 - \frac{w_0}{24EI}<x-x_w>^4 - \frac{w_1-w_0}{120EI(u_w-x_w)}<x-x_w>^5 + \frac{w_1}{24EI}<x-u_w>^4 + \frac{w_1-w_0}{120EI(u_w-x_w)}<x-u_w>^5 + \frac{m_0}{6EI}<x-x_m>^3 - \frac{m_0}{6EI}<x-u_m>^3 \quad (2)$$

$$\theta_b = \theta_a + \frac{V_a L^2}{2EI} + \frac{M_a L}{EI} - \frac{P}{2EI}(L-x_P)^2 + \frac{K}{EI}(L-x_K) - \frac{w_0}{6EI}(L-x_w)^3 - \frac{w_1-w_0}{24EI(u_w-x_w)}(L-x_w)^4 + \frac{w_1}{6EI}(L-u_w)^3 + \frac{w_1-w_0}{24EI(u_w-x_w)}(L-u_w)^4 + \frac{m_0}{2EI}(L-x_m)^2 - \frac{m_0}{2EI}(L-u_m)^2 \quad (3)$$

$$y_b = y_a + \theta_a L + \frac{V_a L^3}{6EI} + \frac{M_a L^2}{2EI} - \frac{P}{6EI}(L-x_P)^3 + \frac{K}{2EI}(L-x_K)^2 - \frac{w_0}{24EI}(L-x_w)^4 - \frac{w_1-w_0}{120EI(u_w-x_w)}(L-x_w)^5 + \frac{w_1}{24EI}(L-u_w)^4 + \frac{w_1-w_0}{120EI(u_w-x_w)}(L-u_w)^5 + \frac{m_0}{6EI}(L-x_m)^3 - \frac{m_0}{6EI}(L-u_m)^3 \quad (4)$$