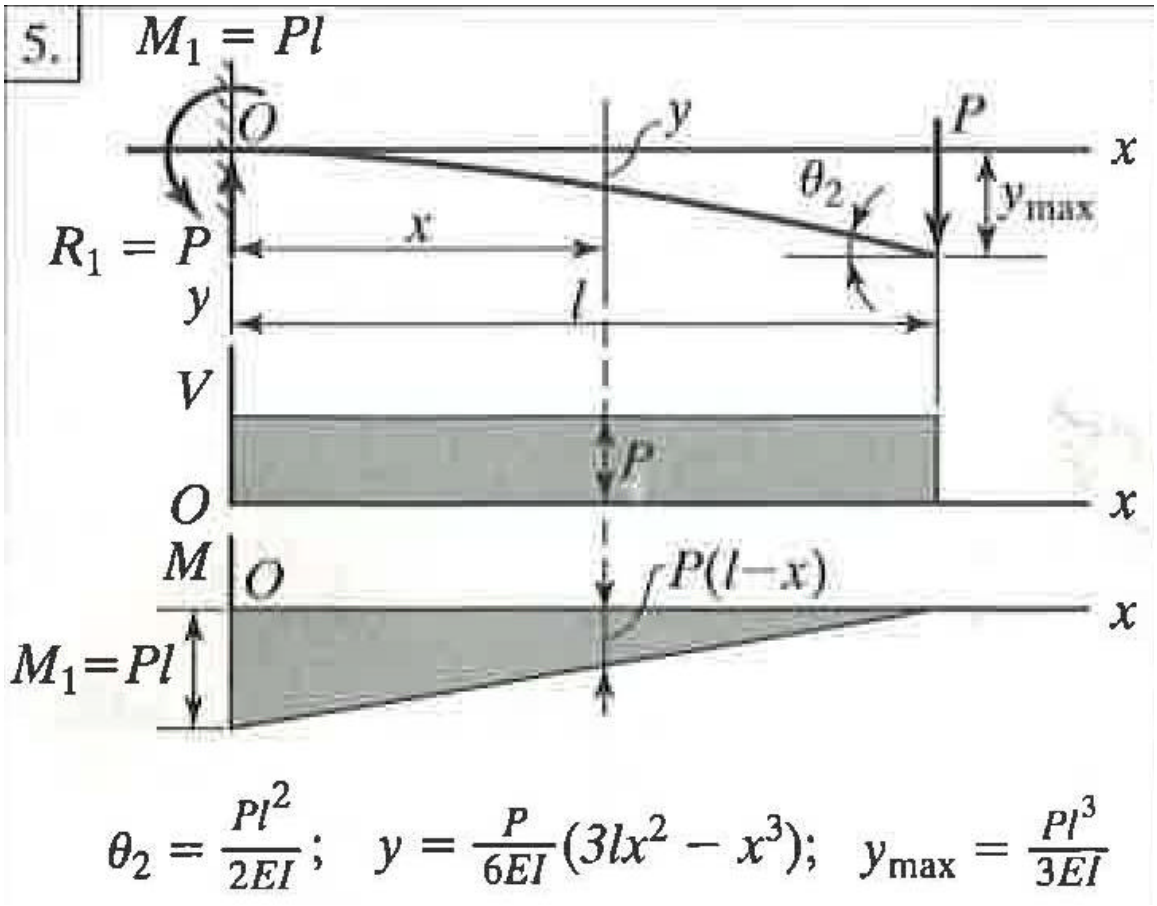
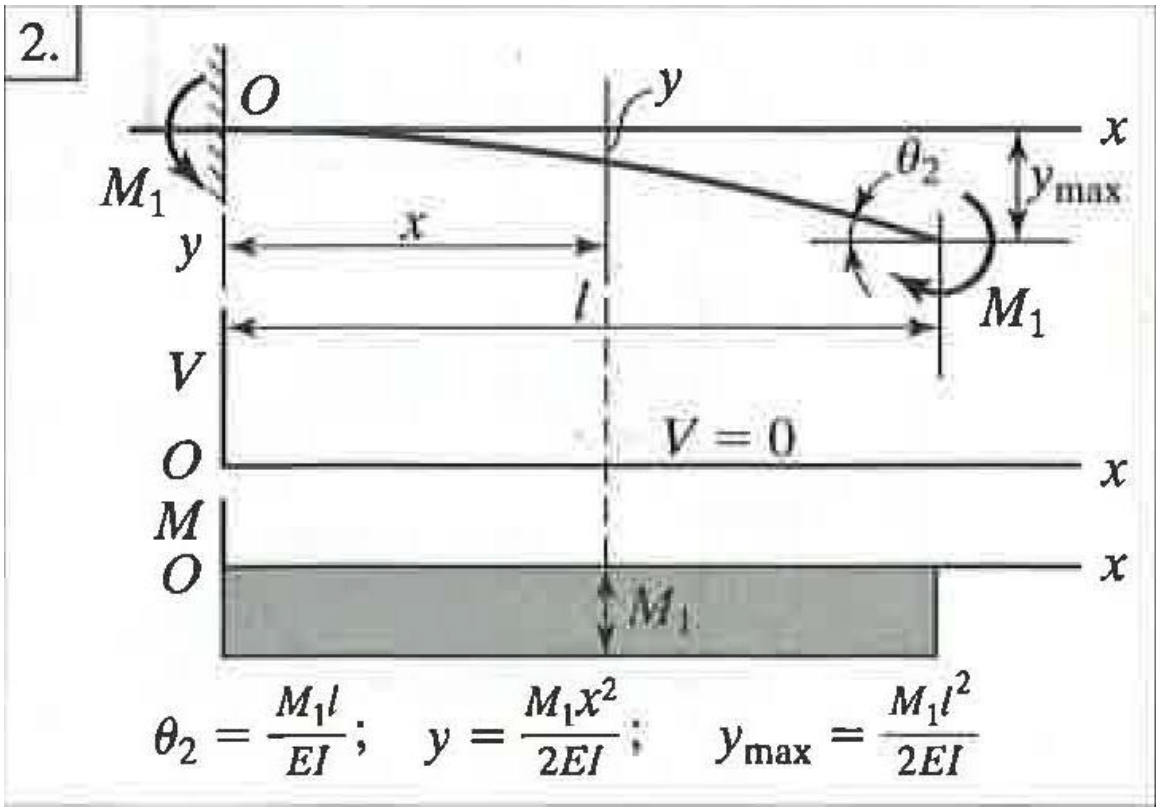
Cantilever Beam with a Point Load

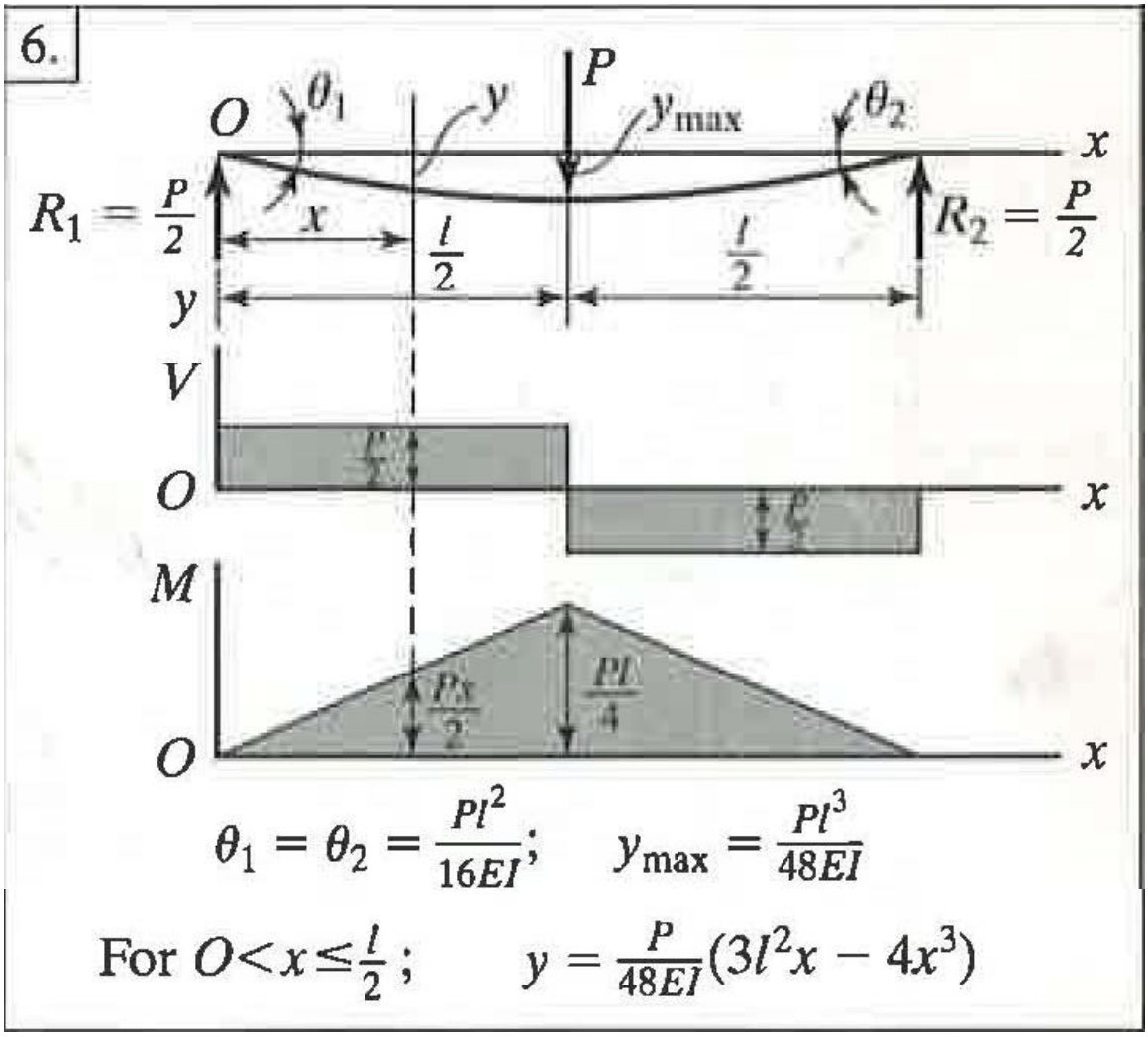


$$\theta_2 = \frac{Pl^2}{2EI}; \quad y = \frac{P}{6EI}(3lx^2 - x^3); \quad y_{max} = \frac{Pl^3}{3EI}$$

Cantilever Beam with a Moment Load



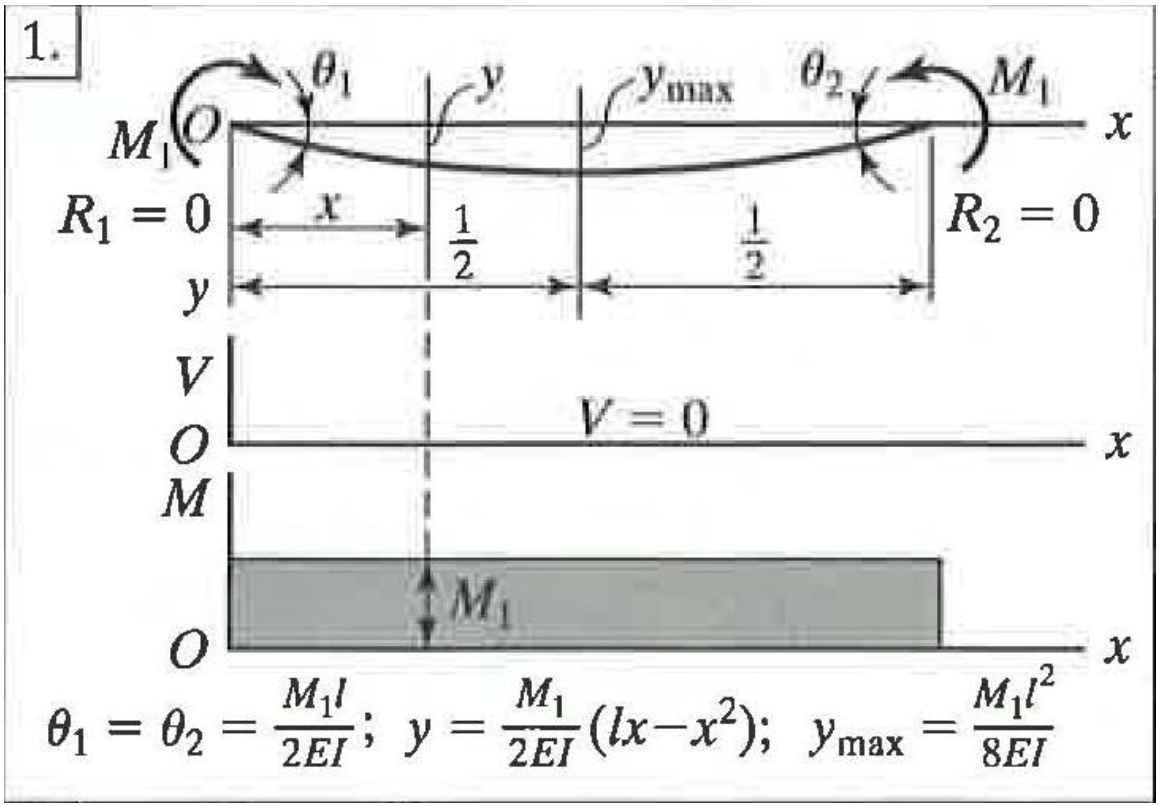
Simply-supported Beam with a Point Load at Mid-span



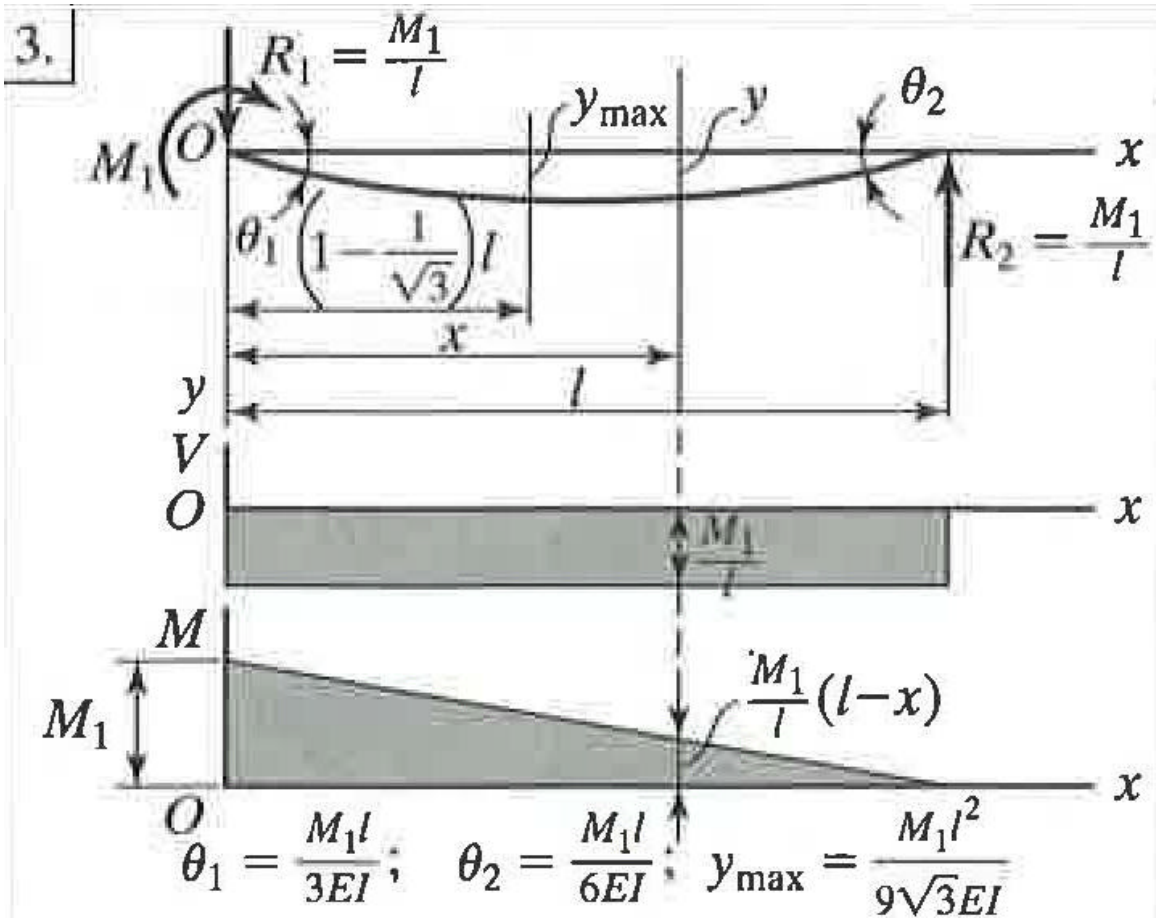
$$\theta_1 = \theta_2 = \frac{Pl^2}{16EI}; \qquad y_{\max} = \frac{Pl^3}{48EI}$$

For $O < x \leq \frac{l}{2}$; $\qquad y = \frac{P}{48EI}(3l^2x - 4x^3)$

Simply-supported Beam with Equal Moment Loads at Two Ends

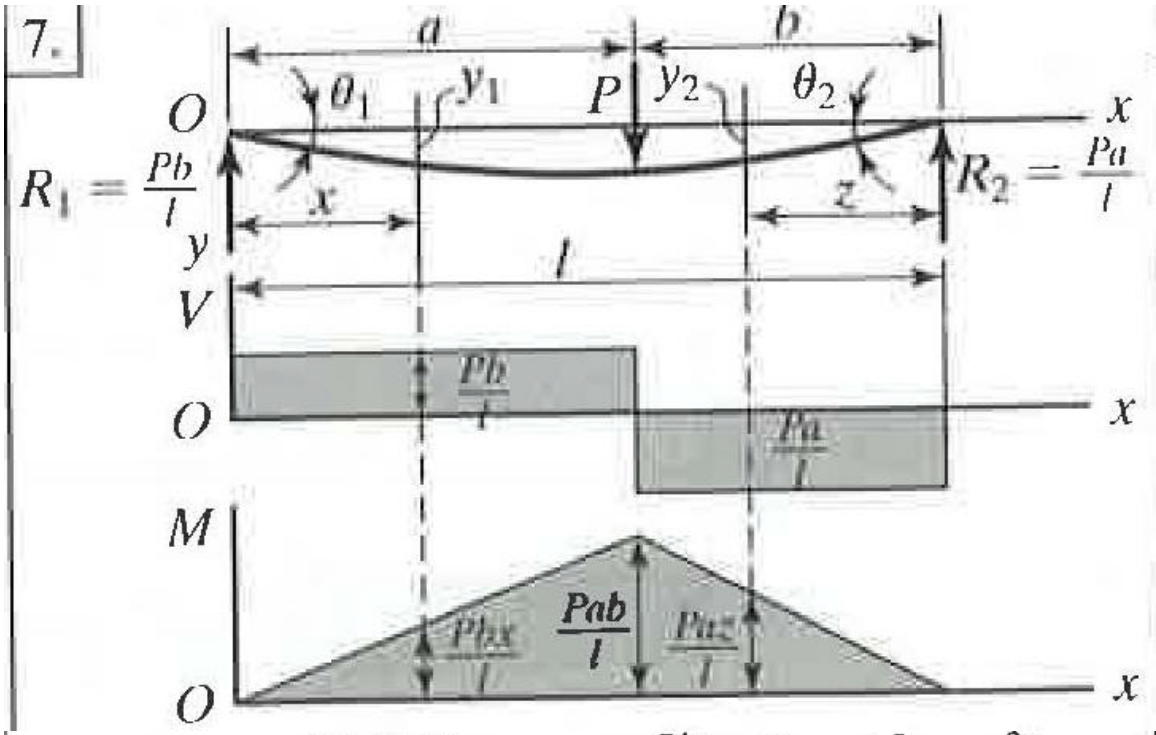


Simply-supported Beam with a Moment Load at One End



Simply-supported Beam with a Point Load

7.

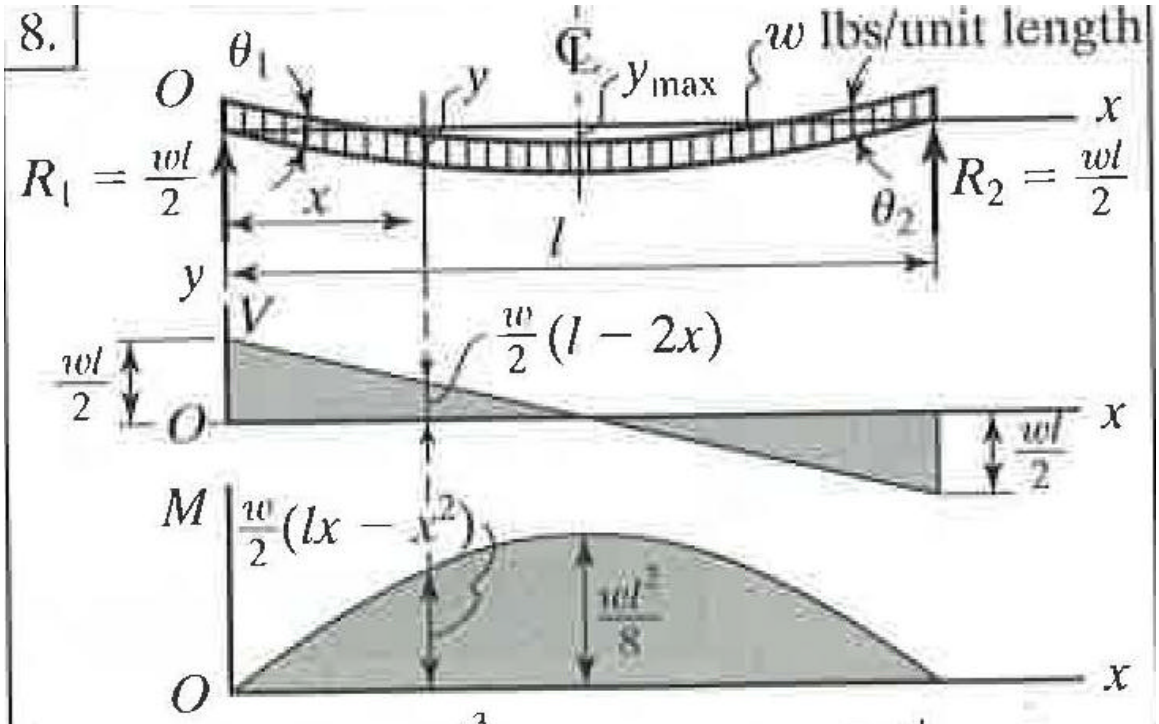


$$\theta_1 = \frac{Pab(l+b)}{6lEI}; \quad y_1 = \frac{Pbx}{6lEI}(l^2 - b^2 - x^2)$$

$$\theta_2 = \frac{Pab(l+a)}{6lEI}; \quad y_2 = \frac{Paz}{6lEI}(l^2 - a^2 - z^2)$$

Simply-supported Beam with a Uniformly Distributed Load

8.

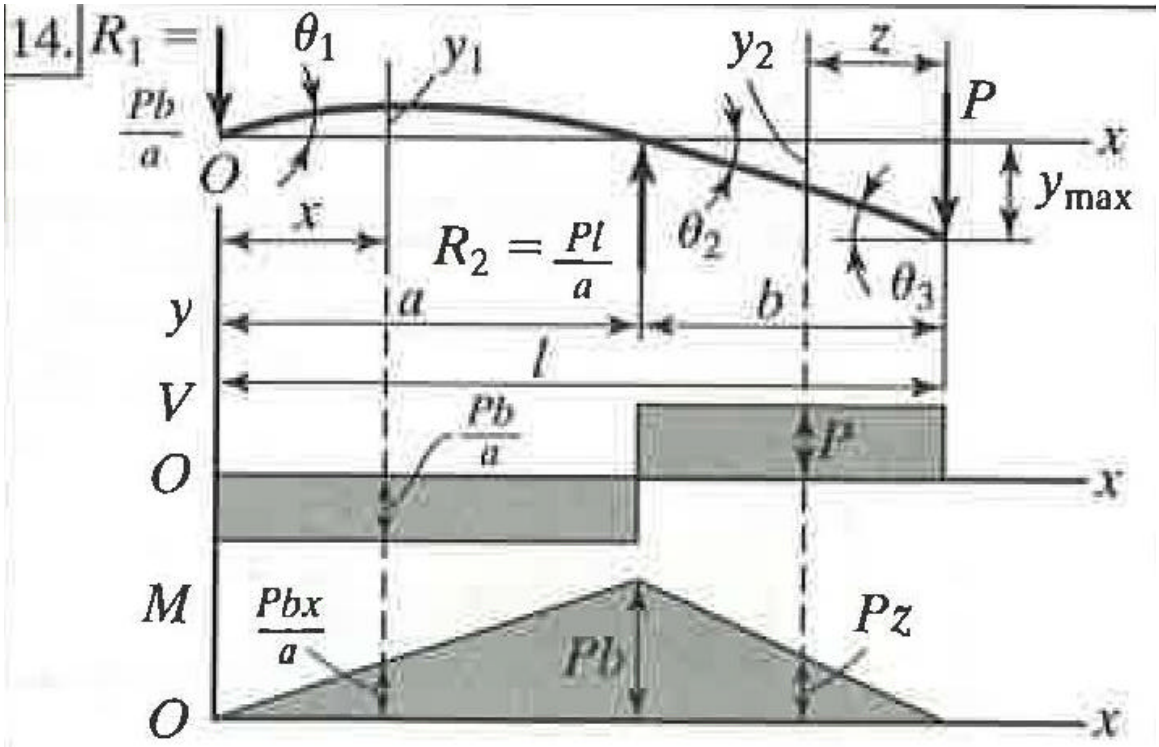


$$\theta_1 = \theta_2 = \frac{wl^3}{24EI}; \qquad y_{max} = \frac{5wl^4}{384EI}$$

$$y = \frac{wx}{24EI}(l^3 - 2lx^2 + x^3)$$

Overhang Beam with a Point Load at One End

14. $R_1 = \frac{Pb}{a}$



$$\theta_1 = \frac{Pab}{6EI}, \quad \theta_2 = \frac{Pab}{3EI}, \quad \theta_3 = \frac{Pb}{6EI}(2l + b)$$

For $O < x \leq a$; $\quad y_1 = \frac{Pbx}{6aEI}(x^2 - a^2)$

For $O < z \leq b$; $\quad y_2 = \frac{P}{6EI}[z^3 - b(2l + b)z + 2b^2l]$

$$y_{max} = \frac{Pb^2l}{3EI}$$