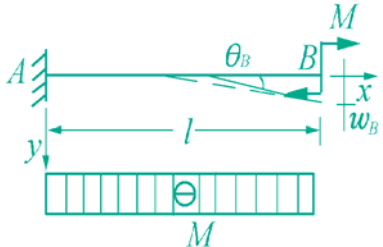
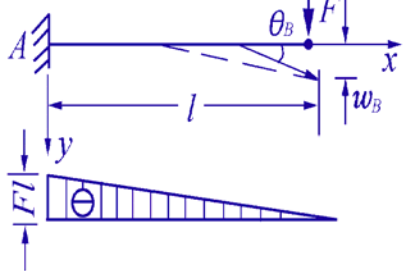
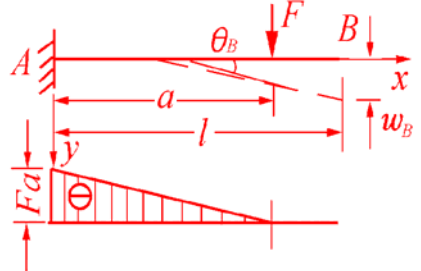
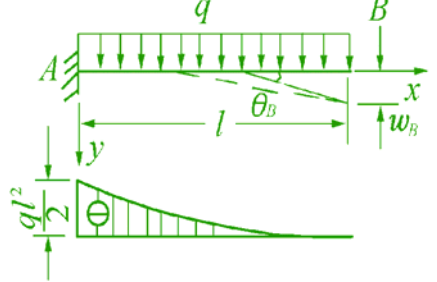
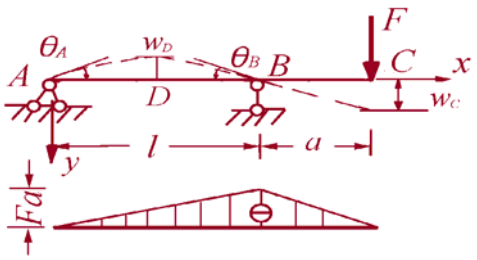


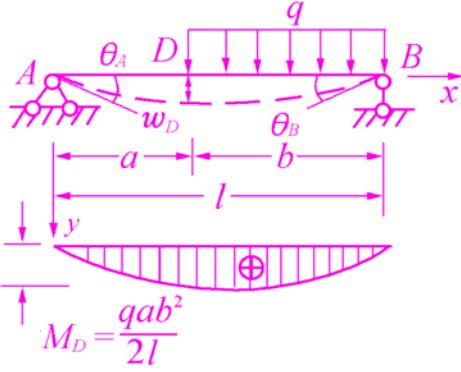
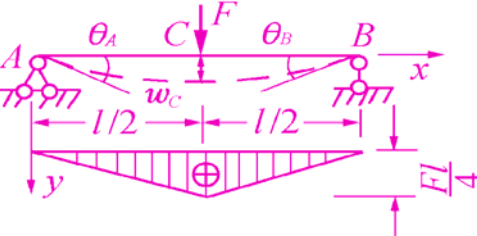
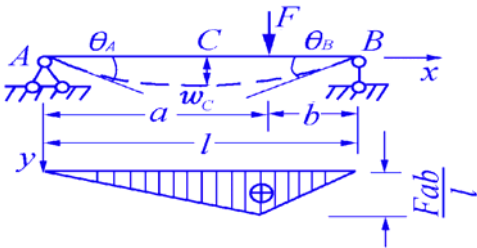
表 1 简单载荷作用下梁的挠度和转角

	梁上荷载及弯矩图	挠曲线方程	转角和挠度
1		$w = +\frac{Mx^2}{2EI}$	$\theta_B = +\frac{Ml}{EI}$ $w_B = +\frac{Ml^2}{2EI}$
2		$w = +\frac{Fx^2}{6EI}(3l-x)$	$\theta_B = +\frac{Fl^2}{2EI}$ $w_B = +\frac{Fl^3}{3EI}$
3		$w = +\frac{Fx^2}{6EI}(3a-x) \quad 0 \leq x \leq a$ $w = +\frac{Fa^2}{6EI}(3x-a) \quad a \leq x \leq l$	$\theta_B = +\frac{Fa^2}{2EI}$ $w_B = +\frac{Fa^2}{6EI}(3l-a)$
4		$w = \frac{qx^2}{24EI}(x^2 - 4lx + 6l^2)$	$\theta_B = +\frac{ql^3}{6EI}$ $w_B = +\frac{al^4}{8EI}$
5		$w = -\frac{Fax}{6EI}(l^2 - x^2) \quad 0 \leq x \leq l$ $w = \frac{F(l-x)}{6EI}[(x-l)^2 + a(l-3x)] \quad l \leq x \leq l+a$	$\theta_A = -\frac{Fal}{6EI}, \quad \theta_B = \frac{Fal}{3EI}$ $\theta_C = \frac{Fa}{6EI}(2l+3a)$ $w_D = \frac{Fl^2}{24EI}\left(\frac{l}{2} - a\right)$ $w_C = \frac{Fa^2}{3EI}(a+l)$

续表

6		$w = -\frac{qa^2x}{12EI}(l^2 - x^2) \quad 0 \leq x \leq l$ $w = -\frac{q(x-l)}{24EI}[2a^2(3x-l) + (x-l)^2 \cdot (x-l-4a)] \quad l \leq x \leq l+a$	$\theta_A = -\frac{qla^2}{12EI}, \quad \theta_B = \frac{qla^2}{6EI}$ $\theta_C = \frac{qa^2(l+a)}{6EI}$ $w_D = -\frac{qa^2l^2}{32EI}$ $w_C = \frac{qa^2}{24EI}(3a+4l)$
7		$w = +\frac{M_Bx}{6EI}(l^2 - x^2)$	$\theta_A = +\frac{M_Bl}{6EI}, \quad \theta_B = -\frac{M_Bl}{3EI}$ $x = \frac{l}{\sqrt{3}}, \quad w_{\max} = +\frac{M_Bl^2}{9\sqrt{3}EI}$ $x = \frac{l}{2}, \quad w_C = +\frac{M_Bl^2}{16EI}$
8		$w = +\frac{Mx}{6EI}(l^2 - x^2 - 3b^2)$ $0 \leq x \leq a$ $w = -\frac{M}{6EI}[-x^3 + 3l(x-a)^2 + (l^2 - 3b^2)x] \quad a \leq x \leq l$	$\theta_A = +\frac{M}{6EI}(l^2 - 3b^2)$ $\theta_B = +\frac{M}{6EI}(l^2 - 3a^2)$
9		$w = +\frac{qx}{24EI}(l^3 - 2lx^2 + x^3)$	$\theta_A = +\frac{ql^3}{24EI}, \quad \theta_B = -\frac{ql^3}{24EI}$ $w_C = +\frac{5ql^4}{384EI}$

续表

10		$w = \frac{qb^2x}{24EI}(2l^2 - 2x^2 - b^2)$ $0 \leq x \leq a$ $w = +\frac{qb^2}{24EI}[(2l^2 - 2x^2 - b^2)x + \frac{1}{b^2}(x-a)^4] \quad a \leq x \leq l$	$\theta_A = +\frac{qb^2}{24EI}(2l^2 - b^2)$ $\theta_B = -\frac{ab^2}{24EI}(2l-b)^2$ $w_D = +\frac{qb^2a}{24EI}(2l^2 - 2a^2 - b^2)$
11		$w = +\frac{Fx}{48EI}(3l^2 - 4x^2)$ $0 \leq x \leq \frac{l}{2}$	$\theta_A = +\frac{Fl^2}{16EI}$ $\theta_B = -\frac{Fl^2}{16EI}$ $w_C = +\frac{Fl^3}{48EI}$
12		$w = +\frac{Fbx}{6EI}(l^2 - x^2 - b^2)$ $0 \leq x \leq a$ $w = +\frac{Fb}{6EI}[\frac{l}{b}(x-a)^3 + (l^2 - b^2)x - x^3] \quad a \leq x \leq l$	$\theta_A = +\frac{Fab(l+b)}{6EI}$ $\theta_B = +\frac{Fab(l+a)}{6EI}$ <p>设 $a > b$,</p> <p>在 $x = \sqrt{\frac{l^2 - b^2}{3}}$ 处,</p> $w_{\max} = +\frac{Fb}{9\sqrt{3}EI}(l^2 - b^2)^{\frac{3}{2}}$ <p>在 $x = \frac{l}{2}$ 处,</p> $w_C = +\frac{Fb}{48EI}(3l^2 - 4b^2)$