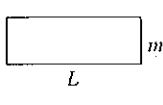
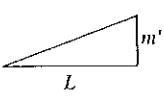
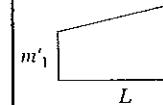
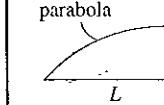
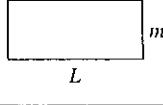
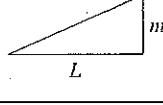
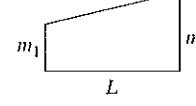
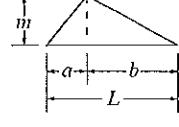
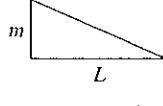


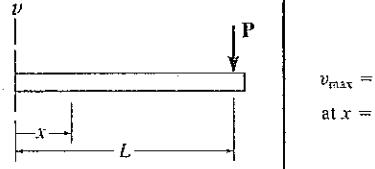
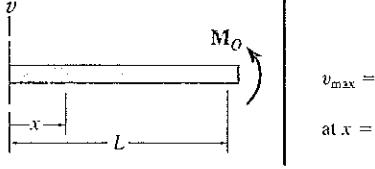
Table for Evaluating $\int_0^L m m' dx$

MARK A. AUSTIN

$\int_0^L m m' dx$				
	$mm'L$	$\frac{1}{2}mm'L$	$\frac{1}{2}m(m'_1 + m'_2)L$	$\frac{2}{3}mm'L$
	$\frac{1}{2}mm'L$	$\frac{1}{3}mm'L$	$\frac{1}{6}m(m'_1 + 2m'_2)L$	$\frac{5}{12}mm'L$
	$\frac{1}{2}m'(m'_1 + m'_2)L$	$\frac{1}{6}m'(m'_1 + 2m'_2)L$	$\frac{1}{6}[m'_1(2m'_1 + m'_2) + m'_2(m'_1 + 2m'_2)]L$	$\frac{1}{12}[m'(3m'_1 + 5m'_2)]L$
	$\frac{1}{2}mm'L$	$\frac{1}{6}mm'(L + a)$	$\frac{1}{6}m[m'_1(L + b) + m'_2(L + a)]$	$\frac{1}{12}mm'\left(3 + \frac{3a}{L} - \frac{a^2}{L^2}\right)L$
	$\frac{1}{2}mm'L$	$\frac{1}{6}mm'L$	$\frac{1}{6}m(2m'_1 + m'_2)L$	$\frac{1}{4}mm'L$

MARK A. AUSTIN

Beam Deflections and Slopes

Loading	$v + \uparrow$	$\theta + \nearrow$	Equation + $\uparrow + \nearrow$
	$v_{\max} = -\frac{PL^3}{3EI}$ at $x = L$	$\theta_{\max} = -\frac{PL^2}{2EI}$ at $x = L$	$v = \frac{P}{6EI}(x^3 - 3Lx^2)$
	$v_{\max} = \frac{M_o L^2}{2EI}$ at $x = L$	$\theta_{\max} = \frac{M_o L}{EI}$ at $x = L$	$v = \frac{M_o}{2EI}x^2$

Beam Deflections and Slopes (continued)

MARK A. AUSTIN

MARK A. AUSTIN

	$v_{\max} = -\frac{wL^4}{8EI}$ at $x = L$	$\theta_{\max} = -\frac{wL^3}{6EI}$ at $x = L$	$v = -\frac{w}{24EI} (x^4 - 4Lx^3 + 6L^2x^2)$
	$v_{\max} = \frac{PL^3}{48EI}$ at $x = L/2$	$\theta_{\max} = \pm \frac{PL^2}{16EI}$ at $x = 0$ or $x = L$	$v = \frac{P}{48EI} (4x^3 - 3L^2x),$ $0 \leq x \leq L/2$
		$\theta_L = -\frac{Pab(L+b)}{6LEI}$ $\theta = \frac{Pab(L+a)}{6LEI}$	$v = -\frac{Pbx}{6LEI} (L^2 - b^2 - x^2)$ $0 \leq x \leq a$
	$v_{\max} = -\frac{5wL^4}{384EI}$ at $x = \frac{L}{2}$	$\theta_{\max} = \pm \frac{wL^3}{24EI}$	$v = -\frac{wx}{24EI} (x^3 - 2Lx^2 + L^3)$
		$\theta_L = -\frac{3wL^3}{128EI}$ $\theta_R = \frac{7wL^3}{384EI}$	$v = -\frac{wx}{384EI} (16x^3 - 24Lx^2 + 9L^3)$ $0 \leq x \leq L/2$ $v = -\frac{wL}{384EI} (8x^3 - 24Lx^2 + 17L^2x - L^3)$ $L/2 \leq x \leq L$
	$v_{\max} = -\frac{M_o L^2}{9\sqrt{3EI}}$	$\theta_L = -\frac{M_o L}{6EI}$ $\theta_R = \frac{M_o L}{3EI}$	$v = -\frac{M_o x}{6EI L} (L^2 - x^2)$