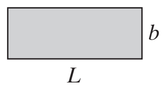
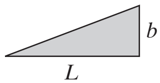
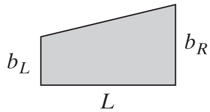
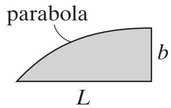
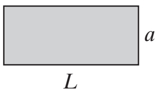
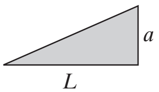
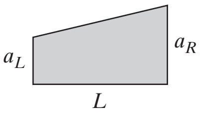
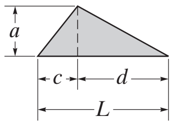
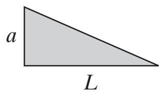
GLOBAL EDITION

Structural Analysis

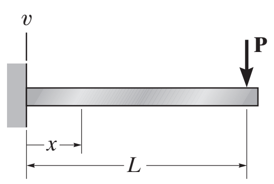
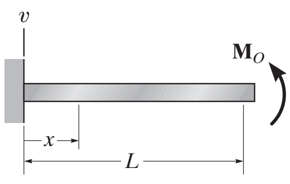
ELEVENTH EDITION IN SI UNITS

R. C. Hibbeler

Table for Evaluating $\int_0^L ab\,dx$

$\int_0^L ab\,dx$				
	abL	$\frac{1}{2}abL$	$\frac{1}{2}a(b_L + b_R)L$	$\frac{2}{3}abL$
	$\frac{1}{2}abL$	$\frac{1}{3}abL$	$\frac{1}{6}a(b_L + 2b_R)L$	$\frac{5}{12}abL$
	$\frac{1}{2}b(a_L + a_R)L$	$\frac{1}{6}b(a_L + 2a_R)L$	$\frac{1}{6}[2(a_Lb_L + a_Rb_R) + a_Lb_R + a_Rb_L]L$ (application also applies if $a_L < 0$ or $b_R < 0$)	$\frac{1}{12}[b(3a_L + 5a_R)]L$
	$\frac{1}{2}abL$	$\frac{1}{6}ab(L + c)$	$\frac{1}{6}a[b_L(L + d) + b_R(L + c)]$	$\frac{1}{12}ab\left(3 + \frac{3c}{L} - \frac{c^2}{L^2}\right)L$
	$\frac{1}{2}abL$	$\frac{1}{6}abL$	$\frac{1}{6}a(2b_L + b_R)L$	$\frac{1}{4}abL$

Beam Deflections and Slopes

Loading	v + ↑	θ + ↺	
	$v_{max} = -\frac{PL^3}{3EI}$ at $x = L$	$\theta_{max} = -\frac{PL^2}{2EI}$ at $x = L$	$v = \frac{P}{6EI}(x^3 - 3Lx^2)$
	$v_{max} = \frac{M_OL^2}{2EI}$ at $x = L$	$\theta_{max} = \frac{M_OL}{EI}$ at $x = L$	$v = \frac{M_O}{2EI}x^2$

Structural Analysis in SI Units -- (Perpetual Access)

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