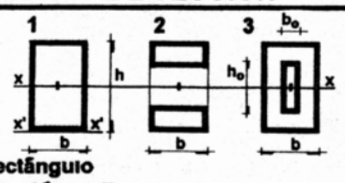
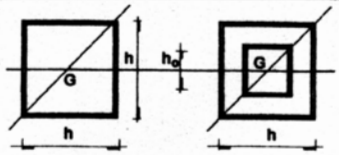
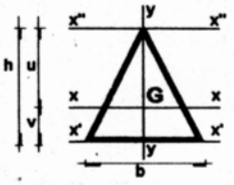
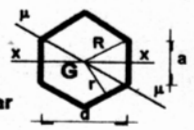
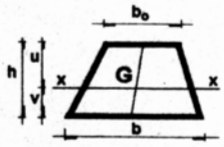
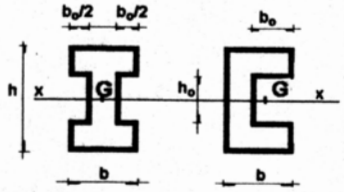
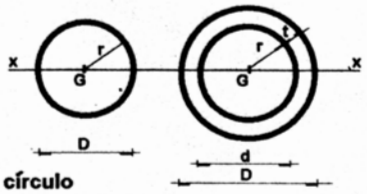
Tabla 2.5.

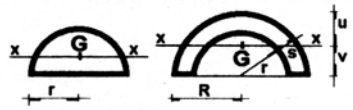
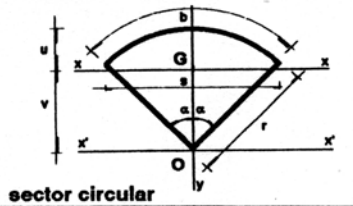
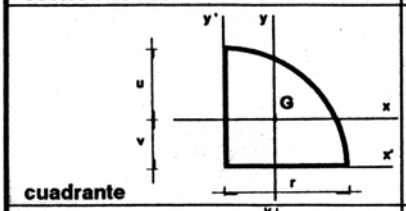
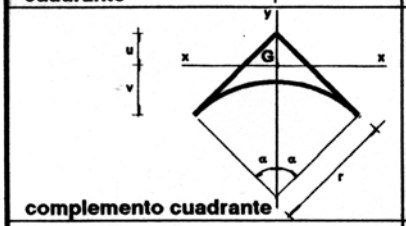
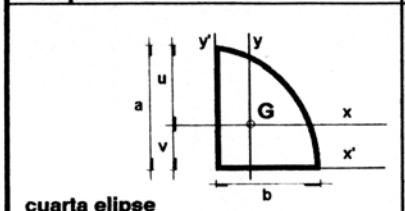
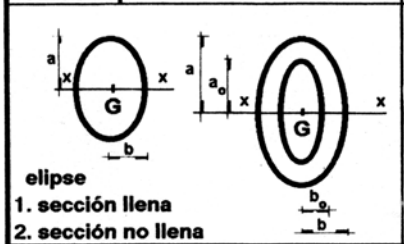
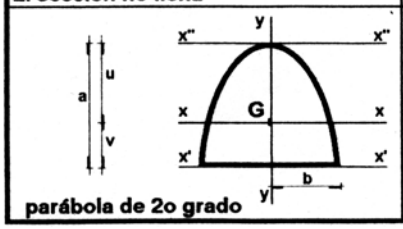
MOMENTOS DE INERCIA Y MODULOS RESISTENTES

TIPO DE SECCION	MOMENTO DE INERCIA	MODULO RESISTENTE
 1. rectánguio 2. sección no llena 3. sección no llena	1. $Ix = \frac{bh^3}{12} = \frac{Ah^2}{12}$ $\quad Ix' = \frac{bh^3}{3} = \frac{Ah^2}{3}$ 2. $Ix = \frac{b}{12}(h^3 - ho^3)$ 3. $Ix = \frac{bh^3 - boho^3}{12}$	1. $W = \frac{bh^2}{6} = 0.1667\, b\, h^3$ 2. $W = \frac{b}{6} \cdot \frac{h^3 - h_o^3}{h}$ 3. $W = \frac{bh^3 - b_o h_o^3}{6h}$
 cuadrado 1. sección llena 2. sección no llena	1. $Ix = \frac{h^4}{12}$ $\quad I_\mu = \frac{h^4}{12}$ 2. $Ix = \frac{h^4 - ho^4}{12}$ $\quad I_\mu = \frac{h^4 - ho^4}{12}$	1. $W_x = \frac{h^3}{6} = 0.1667\, h^3$ $\quad W_\mu = \frac{\sqrt{2}}{12} h^3 = 0.1179\, h^3$ 2. $W_x = \frac{1}{6} \cdot \frac{h^4 - h_o^4}{h}$ $W_\mu = \frac{\sqrt{2}}{12} \cdot \frac{h^4 - h_o^4}{h} = 0.1179 \frac{h^4 - h_o^4}{h}$
 triángulo	$bx'' = \frac{bh^3}{4}$ $Ix = \frac{bh^3}{36}$ $\quad Iy = \frac{bh^3}{48}$ $Ix' = \frac{bh^3}{12}$	$W_x^u = \frac{bh^2}{24}$ $W_x^v = \frac{bh^2}{24}$
 polígono regular 1. caso general 2. hexágono 3. octógono	1. $I_\mu = \frac{A}{24}(6R^2 - a^2) = \frac{A}{48}(12r^2 + a^2)$ 2. $I_\mu = \frac{5\sqrt{3}}{16} R^4 = 0.5413\, R^4 = 0.060\, d^4$ 3. $I_\mu = \frac{1 + 2\sqrt{2}}{6} R^4 = 0.6381\, R^4 = 0.05474\, d^4$	1. $W = \frac{AR}{4}$ 2. $W_\mu = 0.625\, R^3 = 0.12028\, d^3$ $\quad W_x = 0.5413 R^3$ 3. $W_\mu = 0.6906 R^3 = 0.10948\, d^3$ $\quad W_x = 0.6381 R^3$
 trapecio	$Ix = \frac{h^3}{36} \frac{bo^2 + 4bo\,b + b^2}{bo + b}$	$W_x^u = \frac{h^2}{12} \cdot \frac{b_o^2 + 4b_o b + b^2}{b_o + 2b}$ $W_x^v = \frac{h^2}{12} \cdot \frac{b_o^2 + 4b_o b + b^2}{2b_o + b}$
 doble T - doble L	$Ix = \frac{bh^3 - bo.ho^3}{12}$	$W = \frac{bh^3 - b_o^3 h_o}{6h}$
 círculo 1. sección llena 2. sección no llena	1. $Ix = \frac{\pi d^4}{64} = 0.0491\, d^4$ 2. $Ix = \frac{\pi}{64}(D^4 - d^4) = 0.05(D^4 - d^4)$	1. $W = \frac{\pi d^3}{32} = 0.0982\, d^3$ 2. $W = \frac{\pi}{32} \frac{D^4 - d^4}{D}$

FUENTE: Tablas y Abacos para Proyecto de Esctructura / Instituto de la Construcción de Edificios / Depto. de Estabilidad

Tabla 2.5.

MOMENTOS DE INERCIA Y MODULOS RESISTENTES

TIPO DE SECCION	MOMENTO DE INERCIA	MODULO RESISTENTE
 semicírculo 1. sección llena 2. sección no llena	1. $Ix = r^4 \left(\frac{\pi}{8} - \frac{8}{9\pi}\right) = 0.1098\, r^4$ 2. $Ix = 0.1098\,(R^4 - r^4) - \frac{0.283\, R^2 r^2\,(R-r)}{R+r}$	1. $W_x^u = 0.1907\, r^3$ 2. $W_x^v = \frac{3\pi\, Ix\,(R+r)}{4\,(R^2+Rr+r^2)}$ $W_x^u = \frac{3\pi\, Ix\,(R+r)}{R^2(3\pi-4)+Rr(3\pi-4)-4r^2}$
 sector circular	$Ix' = \frac{r^4}{4}\left(1 + \frac{\text{sen}\,\alpha\,.\cos\alpha}{\text{arc}\,\alpha}\right)\text{arc}\,\alpha$ $Ix' = Ix - \frac{r^4 s^2}{9A}$ $Ix' = \frac{r^4}{4}\left(1 - \frac{\text{sen}\,\alpha\,.\cos\alpha}{\text{arc}\,\alpha}\right)$	$W_x^v = \frac{3\,A\,Ix}{3\,A\,r - r^2 s}$ $W_x^u = \frac{3\,A\,Ix}{r^2 s}$
 cuadrante	$Ix = Iy = \frac{A\,r^2}{14.31} = 0.0549\, r^4$ $Ix' = Iy' = \frac{A\,r^2}{16} = 0.1963\, r^4$	$W_x^u = 0.0956\, r^3$ $W_x^v = 0.1296\, r^3$
 complemento cuadrante	$Ix = 0{,}003\, r^4$ $Iy = 0{,}0121\, r^4$	$W_x^u = 0.0095\, r^3$ $W_x^v = 0.0077\, r^3$
 complemento cuadrante	$Ix = Iy = \frac{A\,r^2}{28.5} = 0.00754\, r^4$ $Ix' = Iy' = \frac{A\,r^2}{1.567} = 0.1370\, r^4$ $Ix'' = Iy'' = 0.0181\, r^4$	$W_x^u = 0.0338\, r^3$ $W_x^v = 0.00979\, r^3$
 cuarta elipse	$Ix = \frac{A\,a^2}{14.31} = 0.0549\, b\, a^3$ $\quad Ix' = \frac{A\,a^2}{4}$ $Iy = \frac{A\,b^2}{14.31} = 0.0549\, a\, b^3$ $\quad Iy' = \frac{A\,b^2}{4}$	$W_x^u = 0.0956\, b\, a^2$ $W_x^v = 0.12948\, b^2 a$
 elipse 1. sección llena 2. sección no llena	1. $Ix = \frac{\pi\, b\, a^3}{4} = 0.7854\, a\, b^3$ 2. $Ix = \frac{\pi}{4}\left(a^3 b - a_o^3 b_o\right)$	1. $w = \frac{\pi\, a^2 b}{4} = 0.7854\, a^2 b$ 2. $w = \frac{\pi}{4}\left(a^2 b - \frac{a_o^3 b_o}{a}\right)$
 parábola de 2o grado	$Ix = \frac{16}{175} b\, a^3$ $\quad Ix'' = \frac{4}{7} b\, a^3$ $Ix' = \frac{32}{105} b\, a^3$ $\quad Iy = \frac{4}{15} a\, b^3$	$W_x^u = \frac{20}{21} a^2 b$ $W_x^v = \frac{16}{h} a^2 b$

FUENTE: Tablas y Abacos para Proyecto de Esctructura / Instituto de la Construcción de Edificios / Depto. de Estabilidad