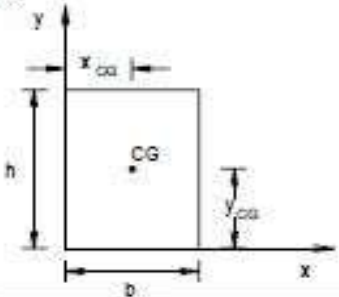
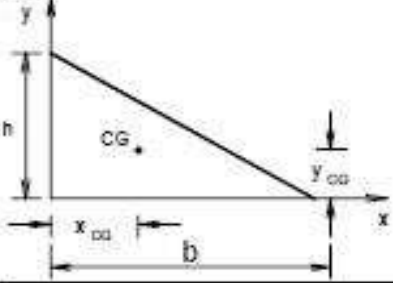
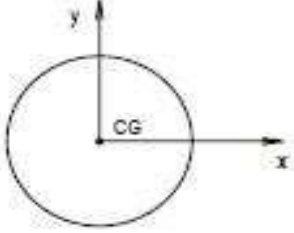
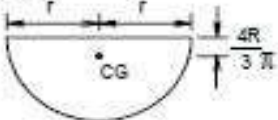
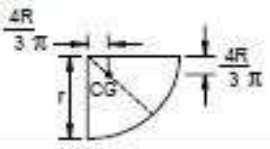
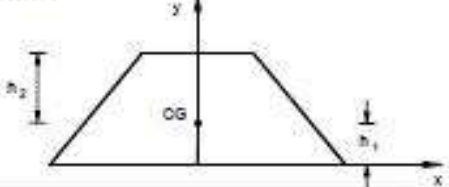
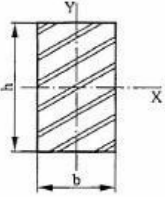
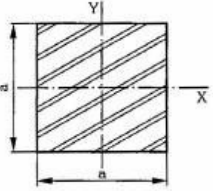
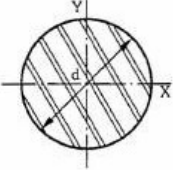
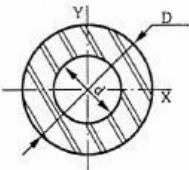
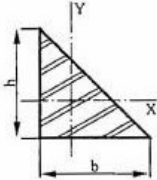
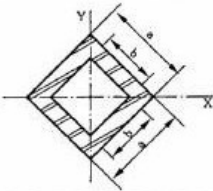
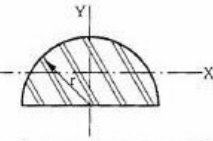


Centro de gravidade de algumas figuras planas

<p>retângulo</p> 	$x_{CG} = \frac{b}{2}$ $y_{CG} = \frac{h}{2}$
<p>triângulo</p> 	$x_{CG} = \frac{b}{3}$ $y_{CG} = \frac{h}{3}$
<p>circulo</p> 	$x_{CG} = 0$ $y_{CG} = 0$
<p>Semicirculo</p> 	$y_{CG} = \frac{4r}{3\pi}$
<p>¼ de circulo</p> 	$x_{CG} = \frac{4r}{3\pi}$ $y_{CG} = \frac{4r}{3\pi}$
<p>trapézio</p> 	$h_1 = \frac{h}{3} \cdot \frac{a+2b}{a+b}$ $h_2 = \frac{h}{3} \cdot \frac{2a+b}{a+b}$

Momento de Inércia Raio de giração e Módulo de Resistência

Secção	Momento de Inércia	Raio de Giração (i)	Módulo de Resistência (W)
	$J_x = \frac{bh^3}{12}$ $J_y = \frac{hb^3}{12}$	$i_x = \frac{h\sqrt{3}}{6}$ $i_y = \frac{b\sqrt{3}}{6}$	$W_x = \frac{bh^2}{6}$ $W_y = \frac{hb^2}{6}$
	$J_x = J_y = \frac{a^4}{12}$	$i_x = i_y = \frac{a\sqrt{3}}{6}$	$w_x = w_y = \frac{a^3}{6}$
	$J_x = J_y = \frac{\pi d^4}{64}$	$i_x = i_y = \frac{d}{4}$	$W_x = W_y = \frac{\pi d^3}{32}$
	$J_x = J_y = \frac{\pi(D^4 - d^4)}{64}$	$i_x = i_y = \frac{\sqrt{D^2 + d^2}}{4}$	$W_x = W_y = \frac{\pi(D^4 - d^4)}{32D}$
	$J_x = \frac{bh^3}{36}$ $J_y = \frac{hb^3}{36}$	$i_x = \frac{h\sqrt{2}}{6}$ $i_y = \frac{b\sqrt{2}}{6}$	$W_x = \frac{bh^2}{24}$ $W_y = \frac{hb^2}{24}$
	$J_x = J_y = \frac{a^4 - b^4}{12}$	$i_x = i_y = \frac{\sqrt{a^2 + b^2}}{12}$	$W_x = W_y = \frac{\sqrt{2(a^4 - b^4)}}{12a}$
	$J_x = 0,1098r^4$ $J_y = 0,3927r^4$	$i_x = 0,264r$ $i_y = 0,5r$	$W_x = 0,19r^3$ $W_y = 0,3927r^3$