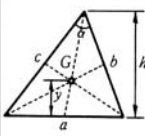

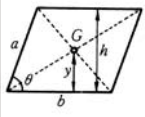

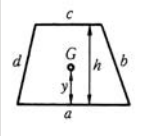

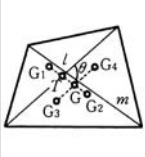

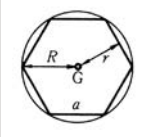

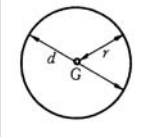

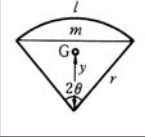

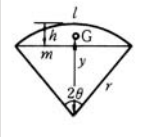

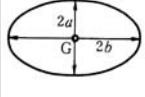

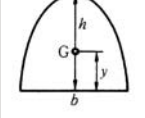


平面図形の面積(A), 周長(L)および重心位置(G)		平面図形の性質					
三 角 形	 $A = \frac{1}{2} ah = \frac{1}{2} bc \sin \alpha = \sqrt{l(l-a)(l-b)(l-c)}$ <p>ただし $2l = a + b + c$</p> $L = a + b + c, y = h/3$	断面積	断面積 A	重心軸 の位置 y	断面二次 モーメン ト J	断面係数 Z	断面二次半径 $i = \sqrt{\frac{J}{A}}$
	 bh	$\frac{bh}{2}$	$\frac{bh^3}{12}$	$\frac{bh^2}{6}$	$\frac{h}{\sqrt{12}} = 0.289h$		
平 行 四 辺 形	 $A = absin \theta = bh$ <p>菱形………$a = b$ 矩形………$\theta = \pi/2$</p> $L = 2(a + b), y = h/2$	b^2	$\frac{\sqrt{2}b}{2}$	$\frac{b^4}{12}$	$\frac{\sqrt{2}b^3}{12}$	$\frac{b}{\sqrt{12}} = 0.289b$	
							
台 形	 $A = \frac{h}{2}(a + c), a/c$ $L = a + b + c + d$ $y = \frac{h(a + 2c)}{3(a + c)}$	$\frac{bh}{2}$	$\frac{h}{3}$	$\frac{bh^3}{36}$	$\frac{bh^2}{24}$	$\frac{h}{\sqrt{18}} = 0.236h$	
							
四 辺 形	 $A = \frac{1}{2} lmsin \theta$ <p>対角線 l により分けられた 2 つの三角形の重心を G₁, G₂, 対角線 m によるそれらを G₃, G₄ とすると G₁, G₂ と G₃, G₄ の交点が G となる。 G₁G₂//m, G₃G₄//l, G₁T = GG₂</p>	$BH - bh$	$\frac{H}{2}$	$\frac{BH^3 - bh^3}{12}$	$\frac{BH^3 - bh^3}{6H}$	$\sqrt{\frac{BH^3 - bh^3}{12(BH - bh)}}$	
							
正 n 角 形	 $A = \frac{nar}{2} = nr^2 \tan \frac{\pi}{n}$ $= \frac{na^2}{4} \cot \frac{\pi}{n} = \frac{nR^2}{2} \sin \frac{2\pi}{n}$ $L = na$ $a = 2\sqrt{R^2 - r^2}$	$b(H - h)$	$\frac{H}{2}$	$\frac{b(H^3 - h^3)}{12}$	$\frac{b(H^3 - h^3)}{6H}$	$\sqrt{\frac{H^3}{12(H - h)}}$	
							
円	 $A = \pi r^2 = \frac{\pi d^2}{4}$ $L = 2\pi r = \pi d$	$\frac{h(b_1 + b_2)}{2}$	$\frac{h(b_1 + 2b_2)}{3(b_1 + b_2)}$	$\frac{h^3(b_1^2 + 4b_1b_2 + b_2^2)}{36(b_1 + b_2)}$	$\frac{h^2(b_1^2 + 4b_1b_2 + b_2^2)}{12(2b_1 + b_2)}$	$\sqrt{\frac{2h^2(b_1^2 + b_2^2)}{6(b_1 + b_2)}}$	
							
扇 形	 $A = \theta r^2 = \frac{1}{2} lr, 2\theta: \text{中心角(rad)}$ $L = l + 2r = 2r(\theta + 1)$ $y = \frac{2}{3} \frac{m}{l} r = \frac{2}{3} \frac{r \sin \theta}{\theta} = \frac{1}{3} \frac{m}{\theta}$	$\frac{3\sqrt{3}}{2} b^2$	$\frac{\sqrt{3}}{2} b = 0.866b$	$\frac{5\sqrt{3}}{16} b_1 = 0.541b_1$	$\frac{5}{8} b^3 = 0.625b^3$	$\sqrt{\frac{5}{24}} b = 0.456b$	
							
弓 形	 $A = \frac{1}{2} \{lr - m(r - h)\} = \frac{1}{2} r^2 (2\theta - \sin 2\theta)$ <p>2θ: 中心角(rad), $h = r(1 - \cos \theta)$</p> $m = 2\sqrt{2rh - h^2} = 2r \sin \theta$ $L = l + m = 2r(\theta + \sin \theta)$ $y = m^3/12A = 2r^3 \sin^3 \theta/3A$	$\frac{\pi d^2}{4} = 0.785d^2$	$\frac{d}{2}$	$\frac{\pi d^4}{64}$	$\frac{\pi d^3}{32}$	$\frac{d}{4}$	
							
楕 円	 $A = \pi ab$ $L = \pi(a + b) \left\{ 1 + \frac{1}{4} \left(\frac{a-b}{a+b} \right)^2 + \frac{1}{64} \left(\frac{a-b}{a+b} \right)^4 + \frac{1}{256} \left(\frac{a-b}{a+b} \right)^6 + \dots \right\}$	$\frac{\pi(D^2 - d^2)}{4}$	$\frac{D}{2}$	$\frac{\pi(D^4 - d^4)}{64}$	$\frac{\pi(D^4 - d^4)}{32D}$	$\frac{\sqrt{D^2 + d^2}}{4}$	
							
放 物 形	 $A = \frac{2}{3} bh, y = \frac{2}{5} h$ $L = b + \frac{b}{2c} \left\{ c\sqrt{1+c^2} + \log(c + \sqrt{1+c^2}) \right\}$ <p>ただし $c = 4h/b$</p>	$\frac{\pi ab}{4}$	$\frac{b}{2}$	$\frac{\pi ab^3}{64}$	$\frac{\pi ab^3}{32}$	$\frac{b}{4}$	
	