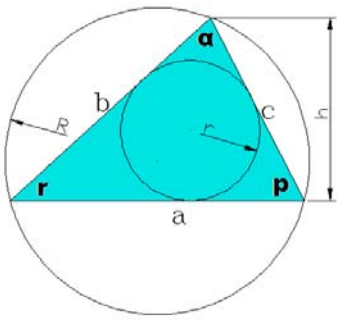
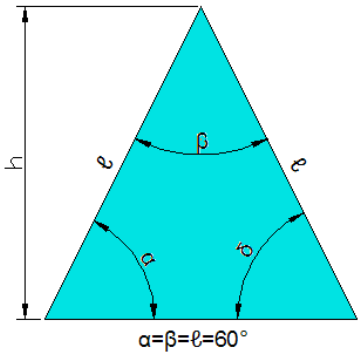


TRIÂNGULO

$$S = \frac{ah}{2} = \frac{abc}{4R} = \frac{ab\,sen\alpha}{2} =$$

$$= \sqrt{s(s-a)(s-b)(s-c)} = sr$$

$$s = \frac{1}{2}(a+b+c)$$

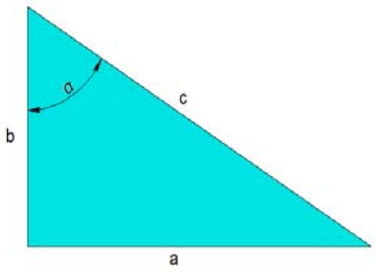


TRIÂNGULO EQUILÁTERO

$$S = \frac{1}{4}\sqrt{3}\ell^2 = 0{,}433\ell^{\delta} =$$

$$\frac{1}{\sqrt{3}}h^{\delta} = 0{,}578h^{\delta}$$

$$\ell = 1{,}115h \quad h = \frac{1}{2}\sqrt{3}\ell = 0{,}866\ell$$

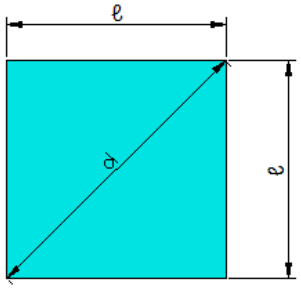


TRIÂNGULO RETÂNGULO

$$S = \frac{a}{2}\sqrt{c^2 - a^2} = \frac{1}{4}c^2 \text{sen } 2\alpha =$$

$$\frac{ab}{2} = \frac{c^2}{2} sen.\alpha cos\alpha =$$

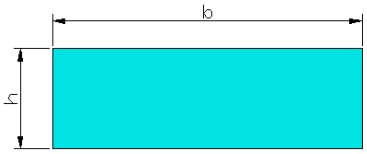
$$\frac{a^2}{2} ctg\alpha = \frac{b^2}{2} tg\alpha$$



QUADRADO

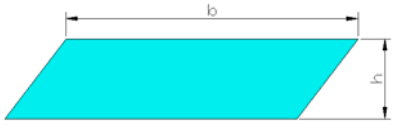
$$S = \ell^2 = \frac{d^2}{2}$$

$$\ell = \frac{d}{\sqrt{2}} = 0{,}707d \quad d = 1{,}414\ell$$



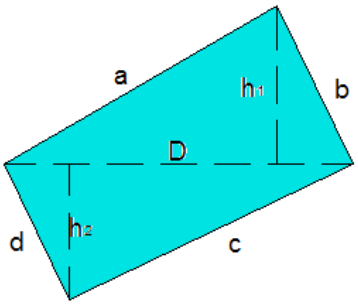
RETÂNGULO

$$S = bh$$



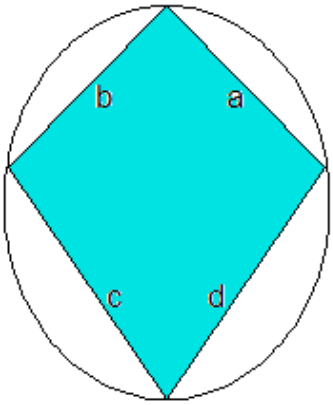
PARALELOGRAMO

$$S = bh$$



QUADRILÁTERO

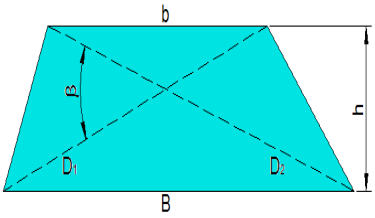
$$S = D\frac{h^1 + h_2}{2}$$



QUADRILÁTERO INSCRITO EM UMA CIRCUNFERÊNCIA

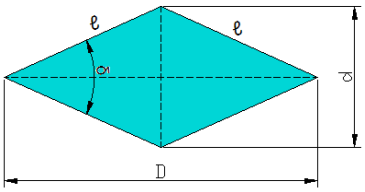
$$S = \sqrt{(s-a)(s-b)}(s-c)(s-d)$$

$$s = \frac{1}{2}(a+b+c+d)$$



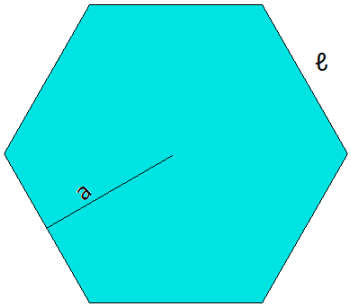
TRAPÉZIO

$$S = \frac{b+B}{2}h = \frac{D^1 D^2 sen\beta}{2}$$



LOSANGO

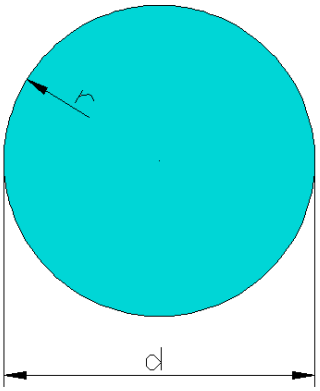
$$S = \frac{Dd}{2} = \ell^2 sen\delta$$



HEXÁGONO

$$S = \frac{P\,a}{2} = 2{,}598\ell^2$$

P= Perímetro

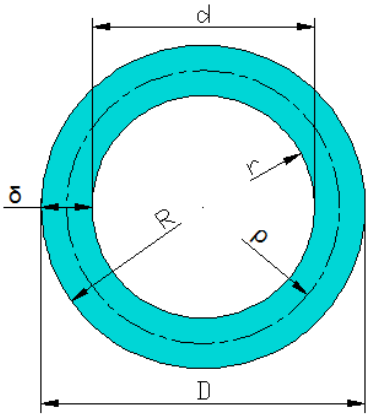


CIRCUNFERÊNCIA

$$c = \pi d = 2\pi r$$

Círculo

$$S = \frac{\pi d^2}{4} = \pi r^2 = c\frac{r}{2} = 0{,}7854 d^2$$

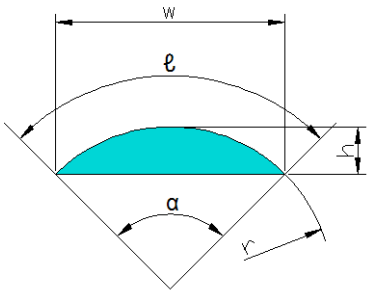


COROA CIRCULAR

$$\rho = \frac{R+r}{2} \quad \delta = R - r \quad r = mR$$

$$S = \frac{\pi^2}{4}(D^2 - d^2) = \pi\left(R^{\delta} - r^{\delta}\right) =$$

$$= \pi\, R^2(1 - m^2) = 2\pi\rho\delta.$$

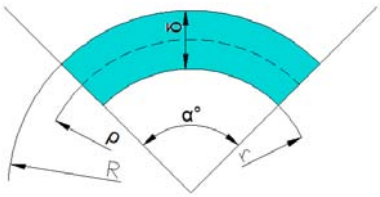


SEGMENTO CIRCULAR

$$w = 2r\, sen\frac{\alpha}{2} = 2\sqrt{h(2r-h)}$$

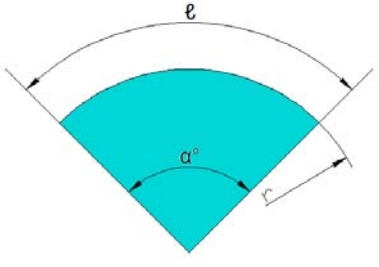
$$h = r - \sqrt{r^2 - w^2/4}$$

$$S = \frac{1}{2}r^2\left(\pi\frac{\alpha^\circ}{180} - sen\alpha\right) = \frac{\ell r - (r-h)w}{2}$$



ARCO DE COROA CIRCULAR

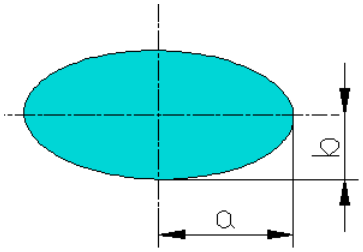
$$S = \pi\frac{\alpha^\circ}{180}\frac{R^2 - r^2}{2} = \pi\frac{\alpha^\circ}{180}\rho\delta$$



SETOR CIRCULAR

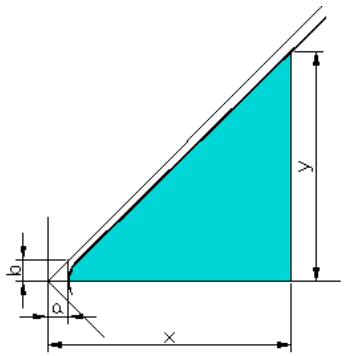
$$\ell = \pi\, r\frac{\alpha^\circ}{180} \qquad \frac{\ell}{r} = \pi\frac{\alpha^\circ}{180} = \alpha$$

$$S = \frac{\alpha}{180}\frac{\pi r^2}{2} = \frac{1}{2}\ell r = \frac{1}{2}\alpha r^2 = 0{,}00872665\alpha^\circ r^2$$



ELIPSE

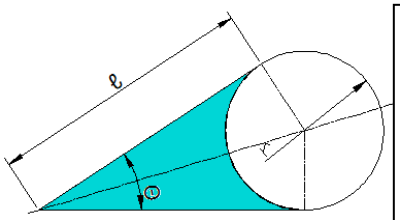
$$s = \pi ab$$



HIPÉRBOLE

$$S = \frac{xy}{2} - \frac{ab}{2}\ell n\left(\frac{x}{a} + \frac{y}{b}\right)$$

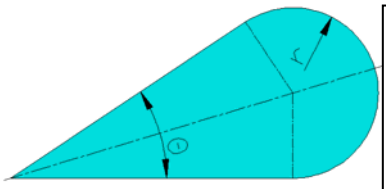
ÁREA DE FIGURAS GEOMÉTRICAS COMPOSTAS



ℓ=r cotgΘ

$$S = \frac{1}{2}2r\ cos\frac{\Theta}{2}r\ cotg\frac{\Theta}{2}cos\frac{\Theta}{2} - \frac{1}{2}r^2\left(\frac{\pi\Theta°}{180°} - sen\Theta\right) =$$

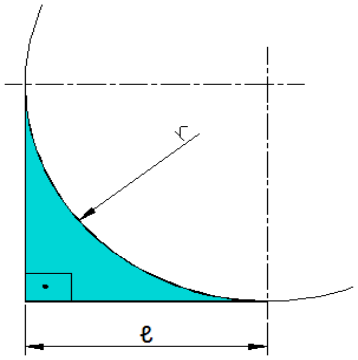
$$= \frac{1}{2}r^2\left(cos^2\frac{\Theta}{2}cotg\frac{\Theta}{2} + sen\Theta - \frac{\pi\Theta°}{180°}\right)$$



ℓ=r cotgΘ

$$S = \frac{1}{2}r^2\left(2cos^2\frac{\Theta}{2}cotg\frac{\Theta}{2} + sen\Theta - \frac{\pi\Theta°}{180°}\right) + \pi r^2 =$$

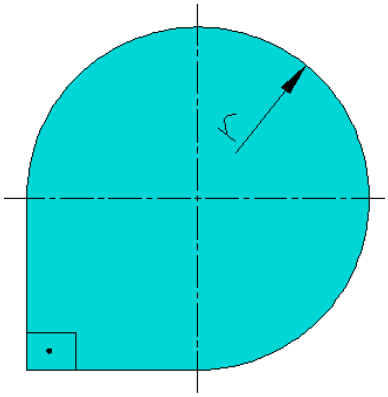
$$= \frac{1}{2}r^2\left(2cos^2\frac{\Theta}{2}cotg\frac{\Theta}{2} + sen\Theta - \frac{\pi\Theta°}{180°} + 2\pi\right)$$



ℓ=r

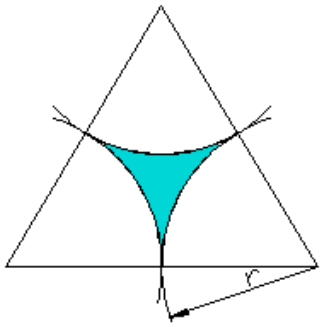
$$S = \frac{1}{2}r^2\left(2 \cdot 0{,}7^2 + 1 - \frac{\pi}{2}\right) =$$

$$= 0{,}2146r^2$$



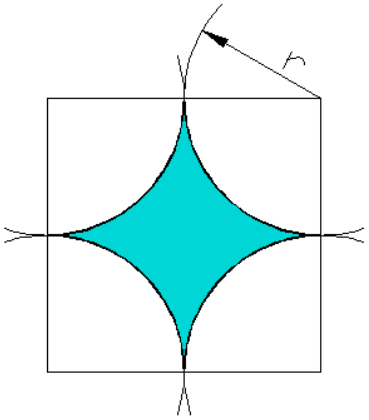
$$S = \frac{1}{2}r^2\left(2 \cdot 0{,}7^2 + 1 - \frac{\pi}{2}\right) +$$

$$+\pi r^2 = 3{,}356r^2$$



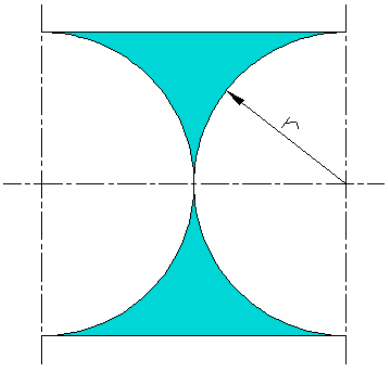
$$S = \frac{r^2}{2}\left(2\sqrt{3} - \pi\right) =$$

$=0{,}16r^2$



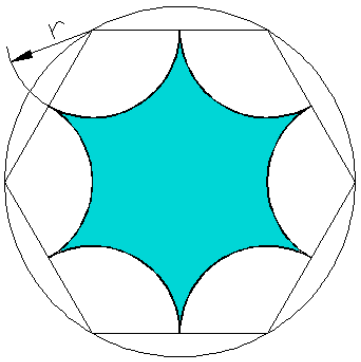
$$S = r^2(4 - \pi) =$$

$=0{,}8584r^2$

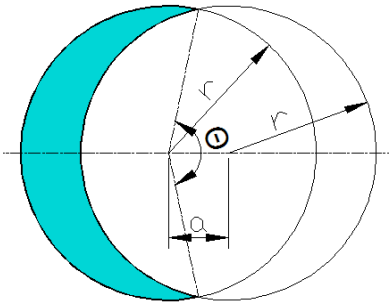


$$S = r^2(4 - \pi) =$$

$=0{,}8584r^2$



$$S = 2r^2\left(3\sqrt{3} - \pi\right)$$



$$S = r^2\left(\pi - \frac{\pi\Theta^\circ}{180^\circ} + sen\varphi\right) = r^2\eta$$

a	$\frac{2r}{10}$	$\frac{4r}{10}$	$\frac{6r}{10}$	$\frac{8r}{10}$	$\frac{10r}{10}$	$\frac{12r}{10}$	$\frac{14r}{10}$	$\frac{16r}{10}$	$\frac{18r}{10}$
η	0,40	0,79	1,18	1,56	1,91	2,25	2,55	2,81	3,02