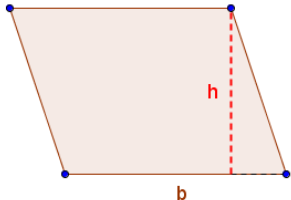
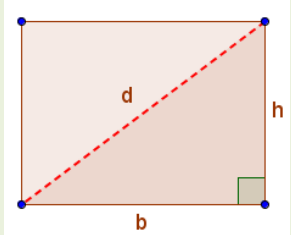
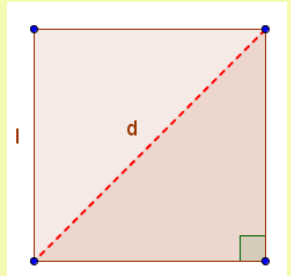
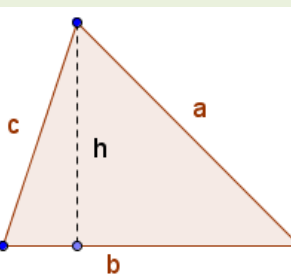
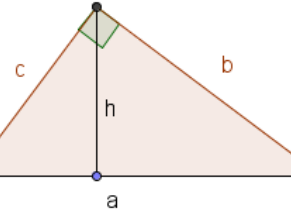
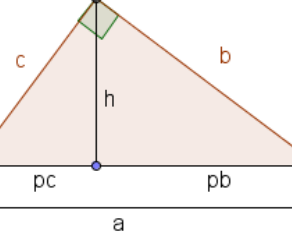
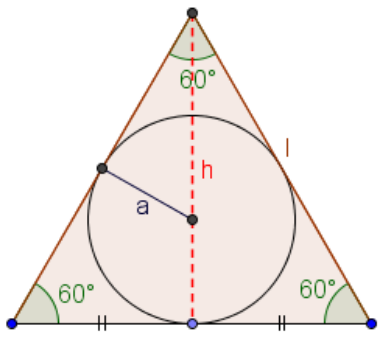
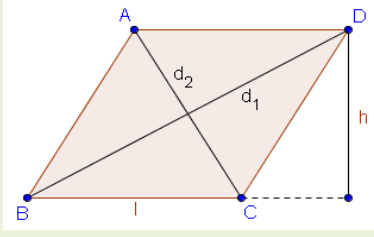


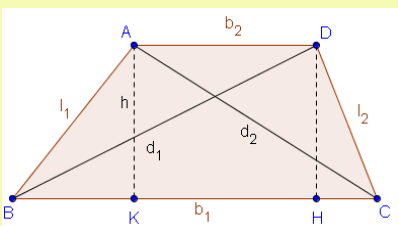
# Formulario esteso di GEOMETRIA PIANA

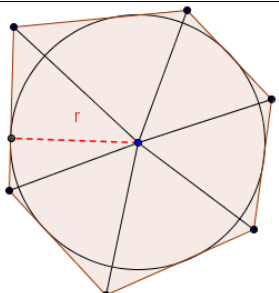
Per usare una formula tutte le lunghezze devono essere espresse nella stessa unità di misura.

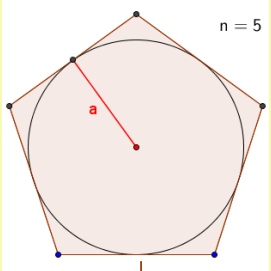
Parallelogramma		$2p = 2 \cdot (b + l) = 2 \cdot b + 2 \cdot l$ $A = b \cdot h$ $b = \frac{A}{h} \quad h = \frac{A}{b}$
Rettangolo		$d = \sqrt{b^2 + h^2}$ $b = \sqrt{d^2 - h^2} \quad h = \sqrt{d^2 - b^2}$ $2p = 2 \cdot (b + h) = 2b + 2h$ $A = b \cdot h$ $b = \frac{A}{h} \quad h = \frac{A}{b}$
Quadrato		$d = l\sqrt{2} = \sqrt{l^2 + l^2} = \sqrt{2 \cdot l^2}$ $l = \frac{d}{\sqrt{2}}$ $2p = 4 \cdot l = 2d\sqrt{2}$ $A = l^2 = \frac{1}{2} \cdot d^2$ $l = \sqrt{A}$
Triangolo		$2p = a + b + c$ $A = \frac{b \cdot h}{2} = \frac{1}{2} \cdot b \cdot h$ $b = \frac{2 \cdot A}{h} \quad h = \frac{2 \cdot A}{b}$ $A = \sqrt{p \cdot (p - a) \cdot (p - b) \cdot (p - c)}$ <p><i>p indica il semiperimetro</i></p>
Triangolo rettangolo Teorema Pitagora		$A = \frac{a \cdot h}{2} \quad A = \frac{b \cdot c}{2}$ $h = \frac{b \cdot c}{a}$ $a^2 = b^2 + c^2$ $a = \sqrt{b^2 + c^2}; \quad b = \sqrt{a^2 - c^2}; \quad c = \sqrt{a^2 - b^2}$
Triangolo rettangolo Teoremi Euclide		$c^2 = a \cdot pc$ $b^2 = a \cdot pb$ $h^2 = pc \cdot pb$

Triangolo equilatero		$h = \frac{l \cdot \sqrt{3}}{2} \qquad l = \frac{2 \cdot h}{\sqrt{3}}$
		$A = \frac{l^2 \cdot \sqrt{3}}{4}$
		$a = \frac{h}{3} = \frac{l \cdot \sqrt{3}}{6}$

Rombo		$l = \sqrt{\left(\frac{d_1}{2}\right)^2 + \left(\frac{d_2}{2}\right)^2}$
		$\frac{d_1}{2} = \sqrt{l^2 - \left(\frac{d_2}{2}\right)^2}$
		$2p = 4 \cdot l$
		$A = \frac{d_1 \cdot d_2}{2} = \frac{1}{2} d_1 \cdot d_2$
		$d_1 = \frac{2 \cdot A}{d_2} \qquad d_2 = \frac{2 \cdot A}{d_1}$

Trapezio		$2p = l_1 + b_1 + b_2 + l_2 = 2m + l_1 + l_2$
		$m = \frac{1}{2} \cdot (b_1 + b_2) = \frac{b_1 + b_2}{2}$
		$A = \frac{1}{2} h \cdot (b_1 + b_2) = \frac{b_1 + b_2}{2} \cdot h = m \cdot h$
		$b_1 + b_2 = \frac{2 \cdot A}{h} \qquad b_1 = \frac{2 \cdot A}{h} - b_2$
		$A = \pi \cdot r \cdot r = \pi \cdot r^2$
		$r = \sqrt{\frac{A}{\pi}}$

Poligono circoscritto a una circonferenza di raggio r		$A = \frac{2p \cdot r}{2} = p \cdot r$
		$2p = \frac{2 \cdot A}{r}$
		$r = \frac{A}{p}$
		<p><i>p</i> indica il semiperimetro</p>

Poligoni regolari		$A = \frac{n \cdot l \cdot a}{2} = p \cdot a$ $p = \frac{A}{a} \quad a = \frac{A}{p} \quad 2p = \frac{2A}{a}$ $f = \frac{a}{l} \quad \varphi = \frac{A}{l^2}$ $A = \frac{n \cdot l^2 \cdot f}{2} \quad A = l^2 \cdot \varphi$
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Lati	Poligono regolare	Angoli interni	$f$	$\varphi$
3	Triangolo	60°	0,289	0,433
4	Quadrato	90°	0,5	1
5	Pentagono	108°	0,688	1,720
6	Esagono	120°	0,866	2,598
8	Ottagono	135°	1,207	4,828
9	Ennagono	140°	1,374	6,182
10	Decagono	144°	1,539	7,694
12	Docedecagono	150°	1,866	11,196

Formule relative al raggio della circonferenza circoscritta e relative al lato, all'apotema e all'area

Lati	Poligono regolare	lato	apotema	area
3	Triangolo	$l = R\sqrt{3}$	$a = \frac{R}{2}$	$A = R^2 \frac{3\sqrt{3}}{4}$
4	Quadrato	$l = R\sqrt{2}$	$a = R \frac{\sqrt{2}}{2}$	$A = 2R^2$
5	Pentagono	$l = R \frac{\sqrt{10 - 2\sqrt{5}}}{2}$	$a = R \frac{\sqrt{5 - 1}}{4}$	$A = R^2 \frac{5\sqrt{10 + 2\sqrt{5}}}{8}$
6	Esagono	$l = R$	$a = R \frac{\sqrt{3}}{2}$	$A = R^2 \frac{3\sqrt{3}}{2}$
8	Ottagono	$l = R\sqrt{2 - 2\sqrt{2}}$	$a = R \frac{\sqrt{2 + \sqrt{2}}}{2}$	$A = R^2 2\sqrt{2}$
10	Decagono	$l = R \frac{\sqrt{5 - 1}}{2}$	$a = R \frac{\sqrt{10 + 2\sqrt{5}}}{4}$	$= R^2 \frac{5\sqrt{10 - 2\sqrt{5}}}{4}$
12	Docedecagono	$l = R \frac{\sqrt{6 - \sqrt{2}}}{2}$	$a = R \frac{\sqrt{6 + \sqrt{2}}}{4}$	$A = 3R^2$