Areas of Plane Figures
Nomenclature
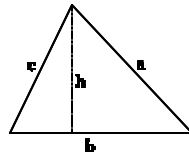
A = Area   **h =** Height
R = Radius   **P =** Perimeter

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Triangle

$$A = \frac{bh}{2}$$

$$P = a + b + c$$

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Circle

$$A = pR^2$$

$$P = 2pR$$

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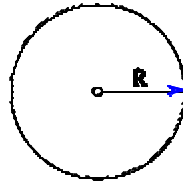
Ellipse
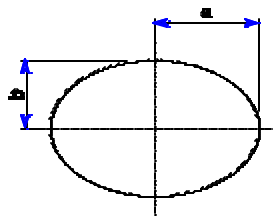
$$A = pab$$

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Areas of Plane Figures

Segment

$$A = \mathbf{p}R^2\,\frac{\mathbf{D}}{360^0} - \frac{R^2 Sin\mathbf{D}}{2}$$

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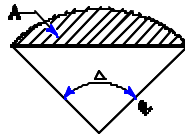
Sector
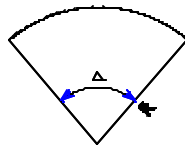
$$A = \pi R^2\,\frac{\Delta}{360^0}$$

$$P = 2R + \frac{\Delta}{360^0}(2\pi R)$$

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Fillet

$$A = RT - \left(\frac{\mathbf{D}}{360^0}\right)\mathbf{p}R^2$$

When: $\mathbf{D} = 90^0, A = 0.2146R^2$

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16
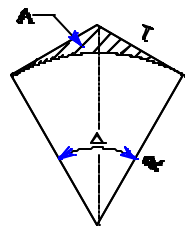
Areas of Plane Figures
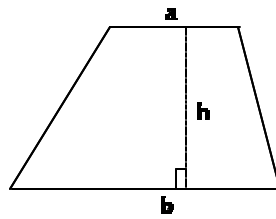## Parallelogram
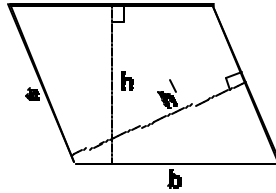
$A = bh$

$A = ah'$

$P = 2(a + b)$

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Trapezoid

$$A = \frac{(a + b)h}{2}$$

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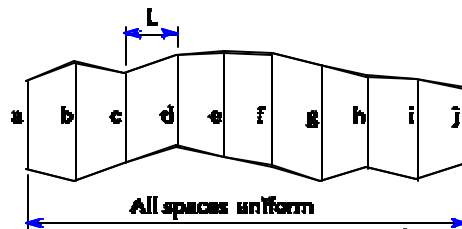
Polygon
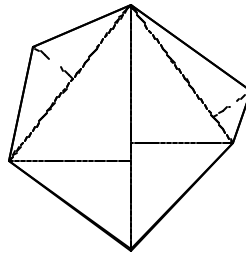
Divide into triangles
A = Sum of all triangles

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Areas of Plane Figures

Annulus
(Circular Ring)
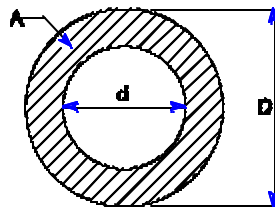
$$A = \frac{\mathbf{p}}{4}\left(D^2 - d^2\right)$$

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Irregular Figure

All spaces uniform

$$A = L\left(\frac{a + j}{2} + b + c + d + e + f + g + h + i\right)$$

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