Fórmulas de geometria

coddy.tech/math/pt/formulas/geometry

ÁREA E PERÍMETRO

Quadrado

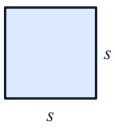
ÁREA

$A = s^2$

PERÍMETRO

$P = 4s$

s lado



Retângulo

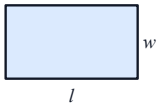
ÁREA

$A = lw$

PERÍMETRO

$P = 2l + 2w$

l comprimento w largura



Triângulo

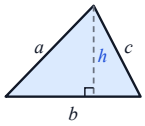
ÁREA

$A = \frac{1}{2}bh$

PERÍMETRO

$P = a + b + c$

b base h altura
a, b, c lados



Paralelogramo

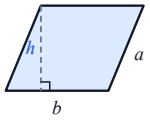
ÁREA

$A = bh$

PERÍMETRO

$P = 2a + 2b$

b base h altura a lado

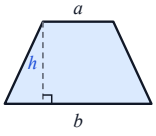


Trapézio

ÁREA

$A = \frac{1}{2}(a + b)h$

a, b lados paralelos
h altura



Losango

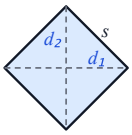
ÁREA

$A = \frac{1}{2}d_1 d_2$

PERÍMETRO

$P = 4s$

d_1, d_2 diagonais s lado



Polígono regular

ÁREA

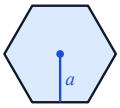
$A = \frac{1}{2}aP$

SOMA DOS ÂNGULOS INTERNOS

$S = (n - 2) \cdot 180°$

CADA ÂNGULO INTERNO

$\frac{(n - 2) \cdot 180°}{n}$



a apótema P perímetro n número de lados

CÍRCULOS

Círculo

COMPRIMENTO DA CIRCUNFERÊNCIA

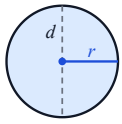
$C = 2\pi r = \pi d$

ÁREA

$A = \pi r^2$

$d = 2r$

r raio d diâmetro



Arco e setor circular

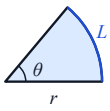
COMPRIMENTO DO ARCO

$L = \frac{\theta}{360°} \cdot 2\pi r$

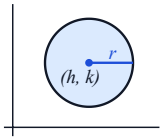
ÁREA DO SETOR

$A = \frac{\theta}{360°} \cdot \pi r^2$

θ ângulo central r raio



Equação da circunferência



$(x - h)^2 + (y - k)^2 = r^2$

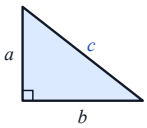
(h, k) centro r raio

TRIÂNGULOS

Teorema de Pitágoras

$a^2 + b^2 = c^2$

a, b catetos c hipotenusa



Ângulos

ÂNGULOS DE UM TRIÂNGULO

$\alpha + \beta + \gamma = 180°$

ÂNGULOS COMPLEMENTARES

$\alpha + \beta = 90°$

ÂNGULOS SUPLEMENTARES

$\alpha + \beta = 180°$

Triângulos retângulos notáveis

LADOS DO 30-60-90

$x : x\sqrt{3} : 2x$

LADOS DO 45-45-90

$x : x : x\sqrt{2}$

Triângulo equilátero

ÁREA

$A = \frac{\sqrt{3}}{4}s^2$

ALTURA

$h = \frac{\sqrt{3}}{2}s$

s lado

Fórmula de Herão

ÁREA

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

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

a, b, c lados s semiperímetro

VOLUME E ÁREA TOTAL

Cubo

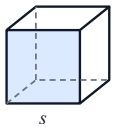
VOLUME

$V = s^3$

ÁREA TOTAL

$SA = 6s^2$

s lado



Paralelepípedo

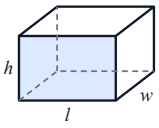
VOLUME

$V = lwh$

ÁREA TOTAL

$SA = 2(lw + lh + wh)$

l comprimento w largura
h altura



Prisma

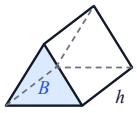
VOLUME

$V = Bh$

ÁREA TOTAL

$SA = 2B + Ph$

B área da base
P perímetro da base
h altura



Cilindro

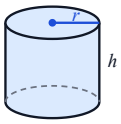
VOLUME

$V = \pi r^2 h$

ÁREA TOTAL

$SA = 2\pi r^2 + 2\pi rh$

r raio h altura



Cone

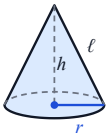
VOLUME

$V = \frac{1}{3}\pi r^2 h$

ÁREA TOTAL

$SA = \pi r^2 + \pi r\ell$

$\ell = \sqrt{r^2 + h^2}$



r raio h altura
ℓ geratriz ou apótema

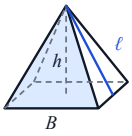
Pirâmide

VOLUME

$V = \frac{1}{3}Bh$

ÁREA TOTAL

$SA = B + \frac{1}{2}P\ell$



B área da base
P perímetro da base
h altura
ℓ geratriz ou apótema

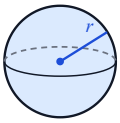
Esfera

VOLUME

$V = \frac{4}{3}\pi r^3$

ÁREA TOTAL

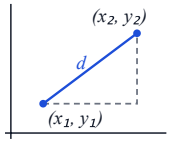
$SA = 4\pi r^2$



r raio

GEOMETRIA ANALÍTICA

Distância entre dois pontos



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

(x_1, y_1), (x_2, y_2) os dois pontos

Ponto médio

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

(x_1, y_1), (x_2, y_2) os dois pontos

Coeficiente angular

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

RETAS PARALELAS

$m_1 = m_2$

RETAS PERPENDICULARES

$m_1 \cdot m_2 = -1$

m coeficiente angular

Equação da reta

FORMA REDUZIDA

$y = mx + b$

FORMA PONTO-INCLINAÇÃO

$y - y_1 = m(x - x_1)$

m coeficiente angular b coeficiente linear