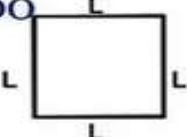
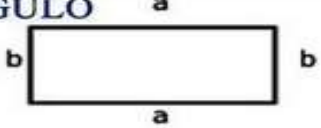
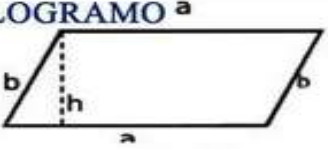
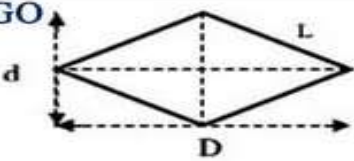
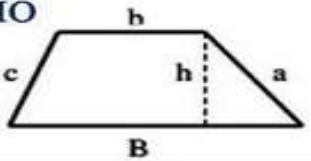
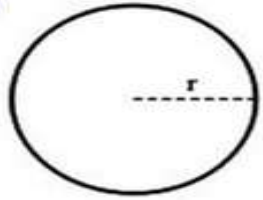
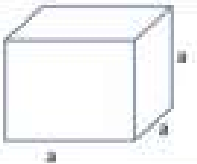
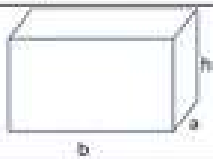
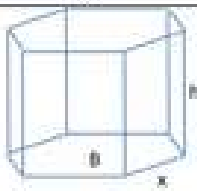
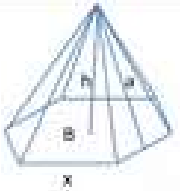
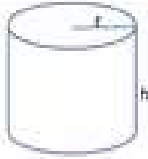
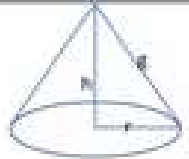


Formulário – PAC de Matemática

Áreas e Perímetros de Figuras Planas

FIGURA	PERÍMETRO	ÁREA
TRIÂNGULO 	$P = a + b + c$	$A = \frac{b \cdot h}{2}$
QUADRADO 	$P = 4L$	$A = L^2$
RETÂNGULO 	$P = 2a + 2b$	$A = a \cdot b$
PARALELOGRAMO 	$P = 2a + 2b$	$A = a \cdot h$
LOSANGO 	$P = 4L$	$A = \frac{D \cdot d}{2}$
TRAPÉZIO 	$P = a + b + c + B$	$A = \frac{B + b}{2} \cdot h$
CÍRCULO 	$L = 2 \cdot \pi \cdot r$ Longitude da circunferência e seu perímetro	$A = \pi \cdot r^2$

Volumes de Sólidos Geométricos

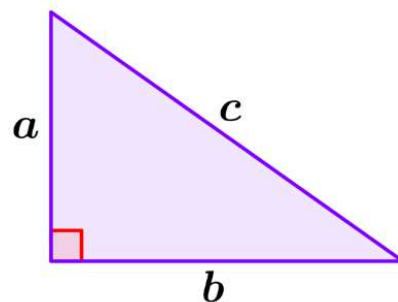
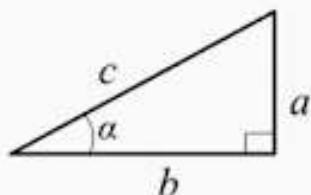
NOMBRE	FIGURA	ELEMENTOS	VOLUME
CUBO		a = aresta	$V = a \times a \times a$
PARALELEPÍPEDO		b = largura a = comprimento h = altura	$V = b \times a \times h$
PRISMA RETO		B = área da base h = altura x = lado n = N° de lados	$V = B \times h$
PIRÂMIDE		B = área da base h = altura x = lado a = apótema n = N° de lados	$V = \frac{1}{3} \times B \times h$
CILINDRO RETO		r = raio h = altura	$V = \pi \times r^2 \times h$
CONE		r = raio h = altura g = geratriz	$V = \frac{\pi}{3} \times r^2 \times h$

Trigonometria

$$\sin \alpha = \frac{a}{c} = \frac{\text{oposto}}{\text{hipotenusa}}$$

$$\cos \alpha = \frac{b}{c} = \frac{\text{adjacente}}{\text{hipotenusa}}$$

$$\tan \alpha = \frac{a}{b} = \frac{\text{oposto}}{\text{adjacente}}$$



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

equações trigonométricas

$$\sin x = \sin \alpha \Leftrightarrow x = \alpha + 2k\pi \vee x = (\pi - \alpha) + 2k\pi, k \in \mathbb{Z}$$

$$\text{ou } \sin x = \sin \alpha \Leftrightarrow x = \alpha + 360^\circ \cdot k \vee x = (180^\circ - \alpha) + 360^\circ k, k \in \mathbb{Z}$$

$$\cos x = \cos \alpha \Leftrightarrow x = \pm \alpha + 2k\pi, k \in \mathbb{Z}$$

$$\text{ou } \cos x = \cos \alpha \Leftrightarrow x = \pm \alpha + 360^\circ k, k \in \mathbb{Z}$$

$$\text{tg } x = \text{tg } \alpha \Leftrightarrow x = \alpha + k\pi, k \in \mathbb{Z}$$

$$\text{ou } \text{tg } x = \text{tg } \alpha \Leftrightarrow x = \alpha + 180^\circ k, k \in \mathbb{Z}$$

fórmula fundamental da trigonometria e fórmulas secundárias

$$\sin^2 x + \cos^2 x = 1$$

$$\sin^2 x = 1 - \cos^2 x$$

$$\cos^2 x = 1 - \sin^2 x$$

$$1 + \text{tg}^2 x = \frac{1}{\cos^2 x}$$

Progressões

	PROGRESSÃO ARITMÉTICA	PROGRESSÃO GEOMÉTRICA
RAZÃO	$r = a_n - a_{n-1}$	$q = \frac{a_n}{a_{n-1}}$
TERMO GERAL	$a_n = a_1 + (n - 1) \cdot r$	$a_n = a_1 \cdot q^{n-1}$
SOMA FINITA	$S_n = \frac{(a_1 + a_n) \cdot n}{2}$	$S_n = \frac{a_1 \cdot (q^n - 1)}{q - 1}$

Propriedades dos Exponenciais e Logaritmos

Propriedades	$n, m, k \in \mathbb{R}$	$x, y \in \mathbb{R}^+$	$a, b \in \mathbb{R}^+$	$p \in \mathbb{R} \setminus \{0\}$
potências de expoente real		logaritmos $a \neq 1$ $b \neq 1$		
$a^0 = 1$ $a^n \times a^m = a^{n+m}$ $\frac{a^n}{a^m} = a^{n-m}$ $a^n \times b^n = (a \times b)^n$ $\frac{a^n}{b^n} = \left(\frac{a}{b}\right)^n$ $a^{-n} = \frac{1}{a^n}$ $(a^n)^m = a^{n \times m}$ $\sqrt[n]{a^m} = a^{\frac{m}{n}}$		$a^{\log_a x} = x$ $\log_a a^k = k$ $\log_a 1 = 0$ $\log_a a = 1$ $\log_a x^k = k \log_a x$ $\log_a (x \times y) = \log_a x + \log_a y$ $\log_a \left(\frac{x}{y}\right) = \log_a x - \log_a y$ $\log_a x = \frac{\log_b x}{\log_b a}$ $\log_b a \times \log_a b = 1$ $\log_a x = \log_{a^p} x^p$		

Equação reduzida da reta

$y = mx + b$, onde m é o declive e b é a ordenada na origem

Dados 2 pontos da reta A e C $\Leftrightarrow A = (x_a; y_a)$ e $C = (x_c; y_c)$

$m = \frac{y_c - y_a}{x_c - x_a} = \frac{v_y}{v_x}$, sendo que v é o vetor diretor da reta $v = (v_x; v_y)$

$b = y_0 - mx_0$, sendo $(x_0; y_0)$ um ponto qualquer que pertence à reta

Fórmula Resolvente Equações do 2º Grau $ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$