

PERÍODO → **IMAGEM**

$y = a + b \cdot \text{sen}(cx + d)$
 sempre $a - b < a + b$

Paridade: par
 $D = \mathbb{R}$
 $\text{Im} = [-1, 1]$
 Período = 2π

$\cos x = \cos(x + 2\pi)$

Senóide
 $f(x) = \text{seno translocado}$
 $D = \mathbb{R}$
 $\text{Im} = [-1, 1]$
 Período = 2π

DERIVADAS
 $f(x) = \cos x \rightarrow f'(x) = -\text{sen } x$
 $f(x) = \text{sen } x \rightarrow f'(x) = \cos x$

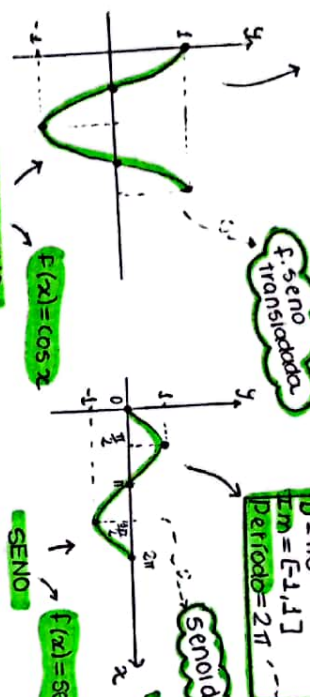
RELACÃO FUNDAMENTAL
 $\text{sen}^2 x + \cos^2 x = 1$

UNIDADES DE MEDIDA
 grau → radiano
 $60' = 1^\circ$
 $1' = 60''$
 radiano → 1 arco cujo comp. é o raio

SUBMÚLTIPLOS
 minutos (')
 segundos (")

MEASURAS
 medida angular → comprimento → linear

$\alpha = \frac{l}{r}$
 α : rad
 l : comp.
 r : raio



funções

$D = \{x \in \mathbb{R} / x \neq \frac{\pi}{2} + k\pi\}$
 $\text{Im} = \mathbb{R}$
 Período = π
 Paridade = ímpar

trigonometria

Assin totas verticais

transf. de arcos

Sen(a+b) = sen a cos b + sen b cos a
cos(a+b) = cos a cos b - sen a sen b
tg(a+b) = $\frac{\text{tg} a + \text{tg} b}{1 - \text{tg} a \text{tg} b}$

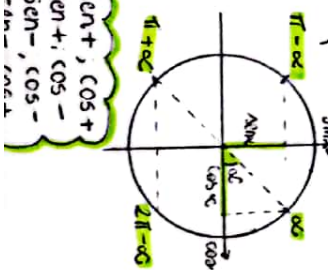
Sen x = cos(1/2 - x)
cos x = sen(1/2 - x)

ARCO DUPLIO

sen 2a = 2 sen a cos a
cos 2a = cos² a - sen² a
1 - 2 sen² a
2 cos² a - 1

tg 2a = $\frac{2 \text{tg} a}{1 - \text{tg}^2 a}$

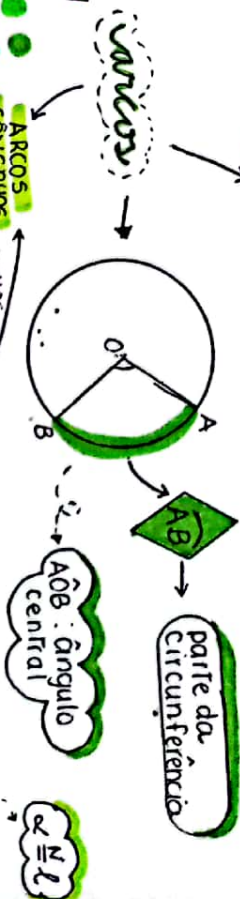
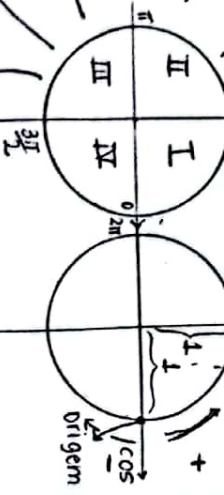
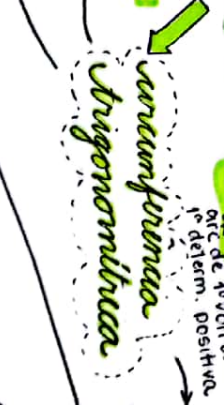
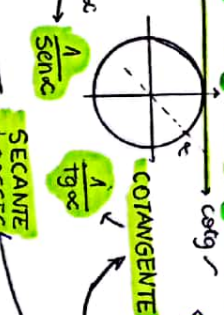
ARCOS COMPLE.



	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π	Fórmula
sen	0	1	0	-1	0	cat. op.
cos	1	0	-1	0	1	cat. adj.
tan	0	inf.	0	inf.	0	sen/cos

VALORES NOTÁVEIS

ARCOS CONGRUOS
 $x = x_0 + k \cdot 2\pi$
 1º de 4º volta a 1º de determ. positiva



arcs de eixo
 $0, \frac{\pi}{2}, \pi, \frac{3\pi}{2}, 2\pi$