

**2<sup>a</sup>  
SÉRIE**

## **CANAL SEDUC-PI2**



PROFESSOR (A):

**KESLLER**



DISCIPLINA:

**MATEMÁTICA**



CONTEÚDO:

**CIRCUNFERÊNCIA  
TRIGONOMÉTRICA**



TEMA GERADOR:

**SAÚDE  
NA ESCOLA**



DATA:

**19.06.2019**

# ROTEIRO DE AULA

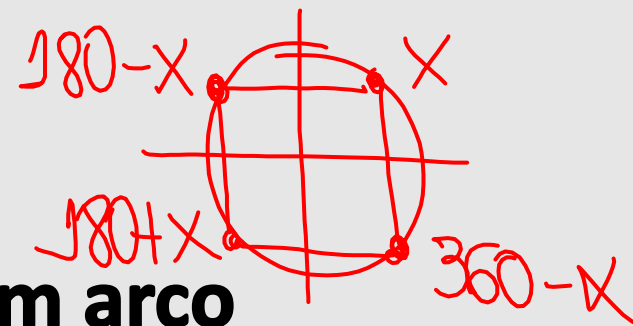
## CIRCUNFERÊNCIA TRIGONOMÉTRICA

➤ Simetrias; ✓

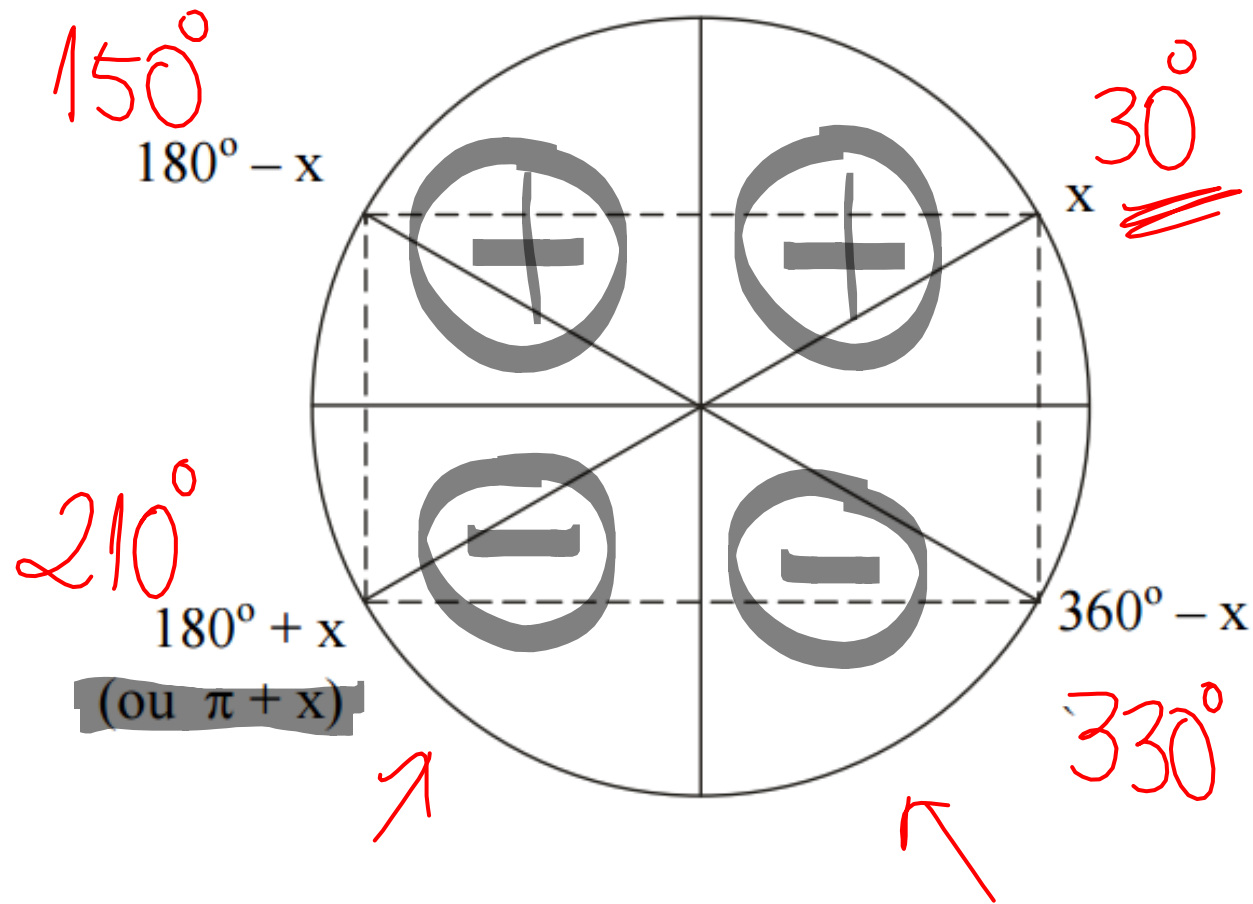
➤ Seno e Cosseno de um arco

trigonométrico-(Variação de sinal)

➤ Função seno e cosseno

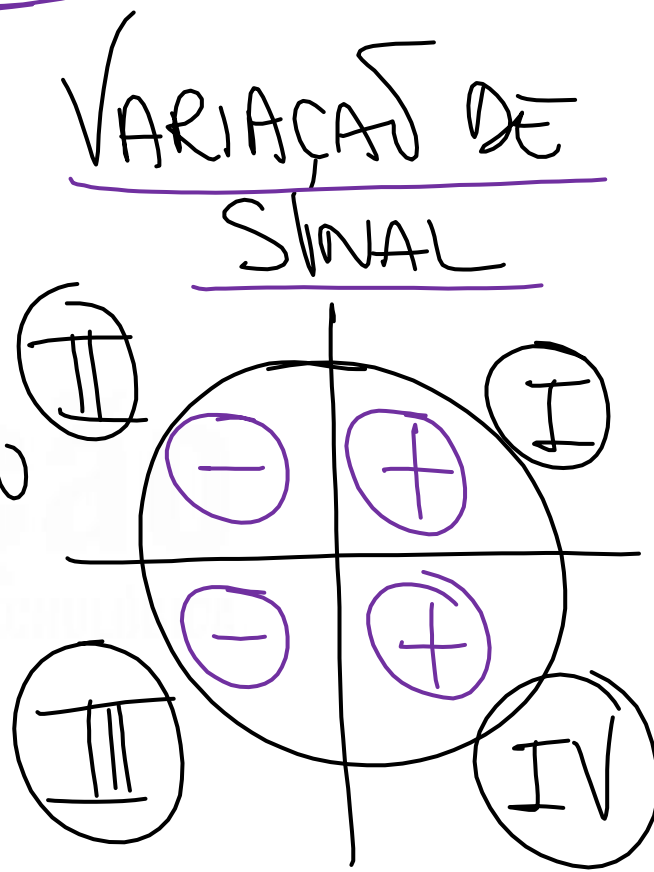
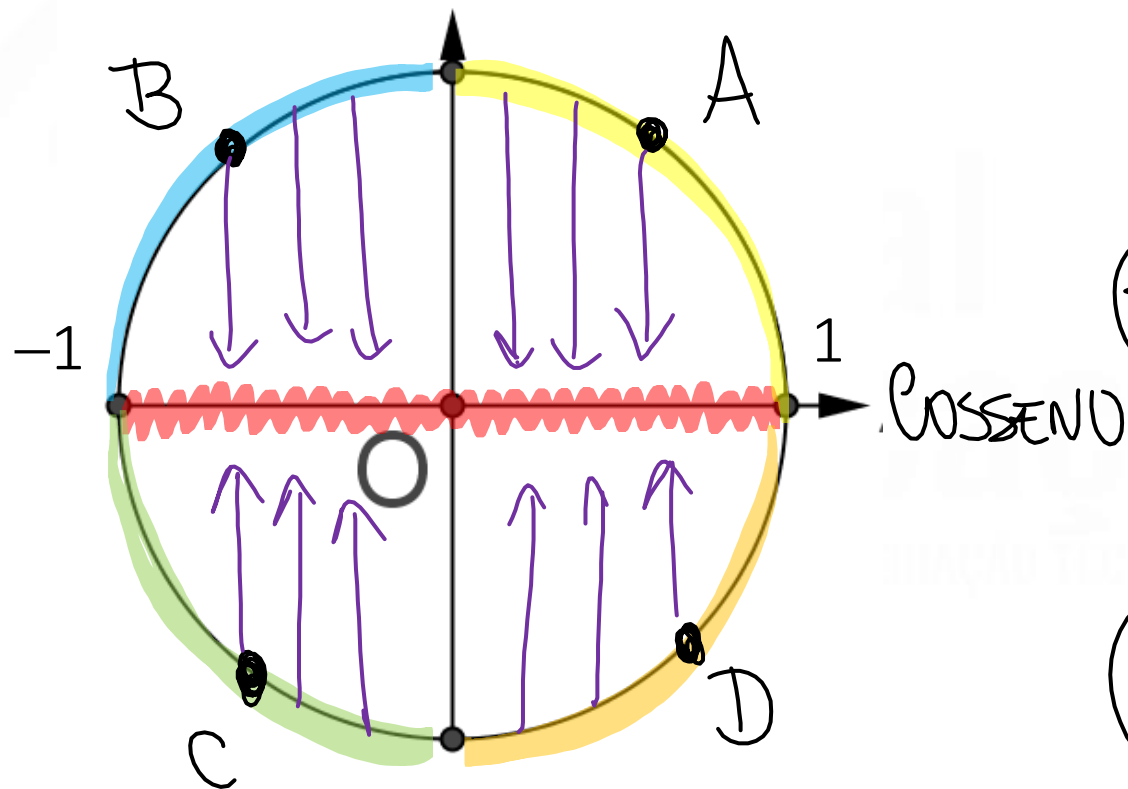
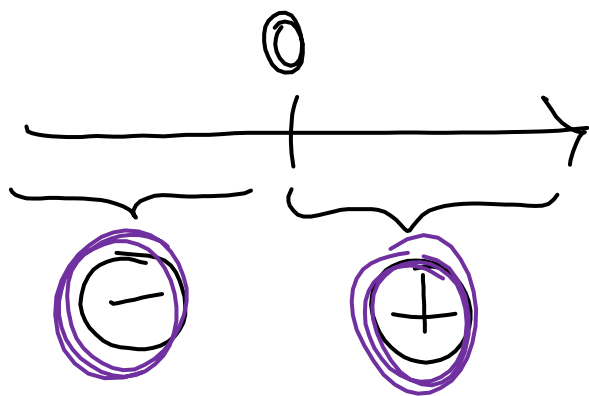


# Seno de $30^\circ$ , $45^\circ$ e $60^\circ$ e seus simétricos



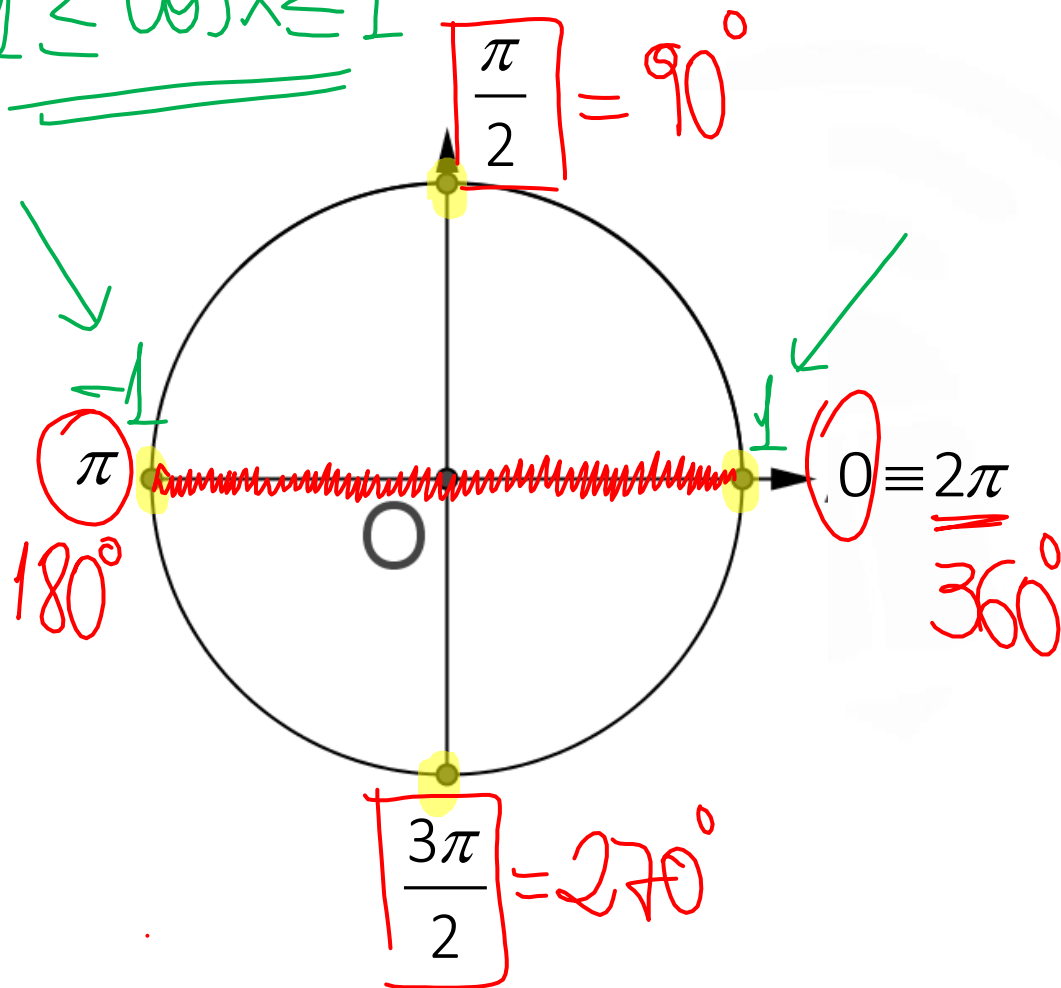
$30^\circ$	$150^\circ$	$210^\circ$	$330^\circ$
$+\frac{1}{2}$	$+\frac{1}{2}$	$-\frac{1}{2}$	$-\frac{1}{2}$
$45^\circ$	$135^\circ$	$225^\circ$	$315^\circ$
$+\frac{\sqrt{2}}{2}$	$+\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$
$60^\circ$	$120^\circ$	$240^\circ$	$300^\circ$
$+\frac{\sqrt{3}}{2}$	$+\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{2}$

# Variação de sinal (Cosseno)



# Cosseno dos Arcos Notáveis

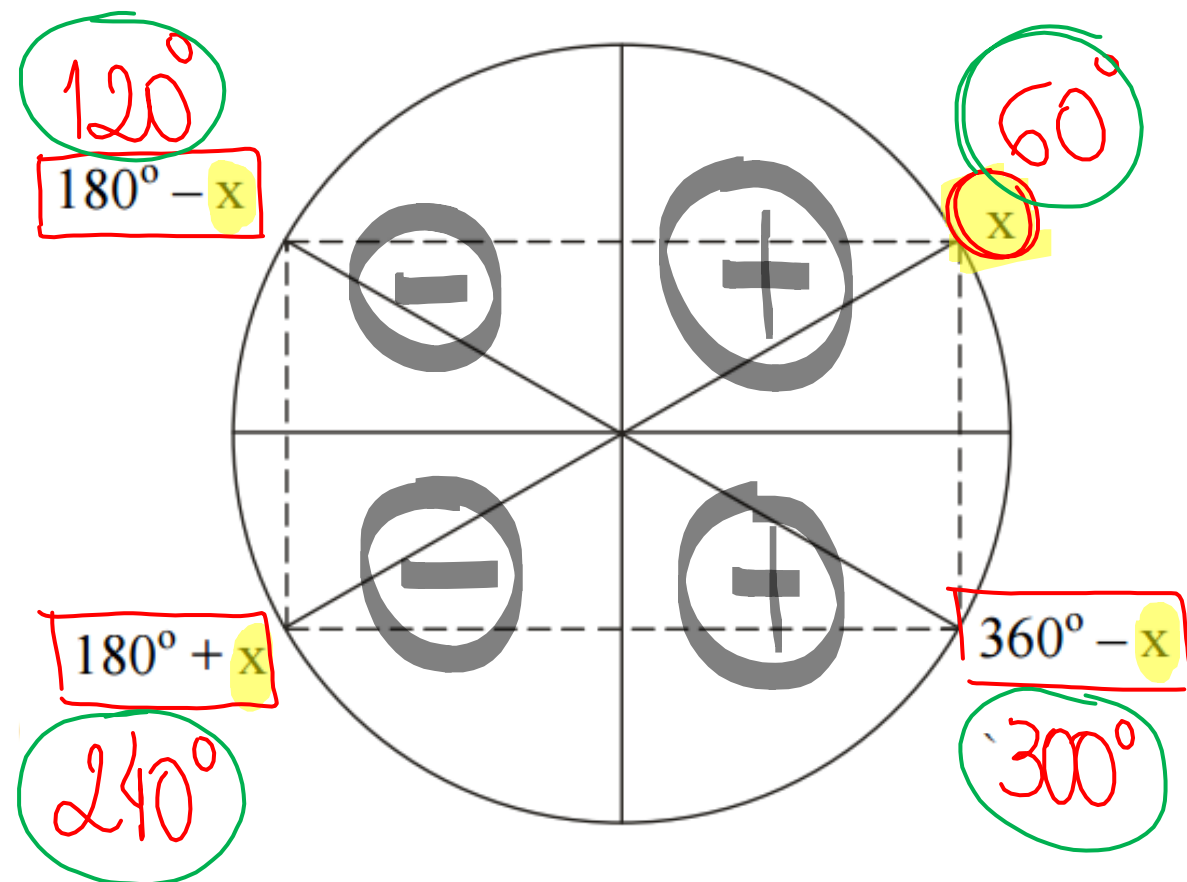
$$-1 \leq \cos x \leq 1$$



Ângulo	Cosseno
$0^\circ$	1
$90^\circ$ ou $\frac{\pi}{2}$	0
$180^\circ$ ou $\pi$	-1
$270^\circ$ ou $\frac{3\pi}{2}$	0
$360^\circ$ ou $2\pi$	1

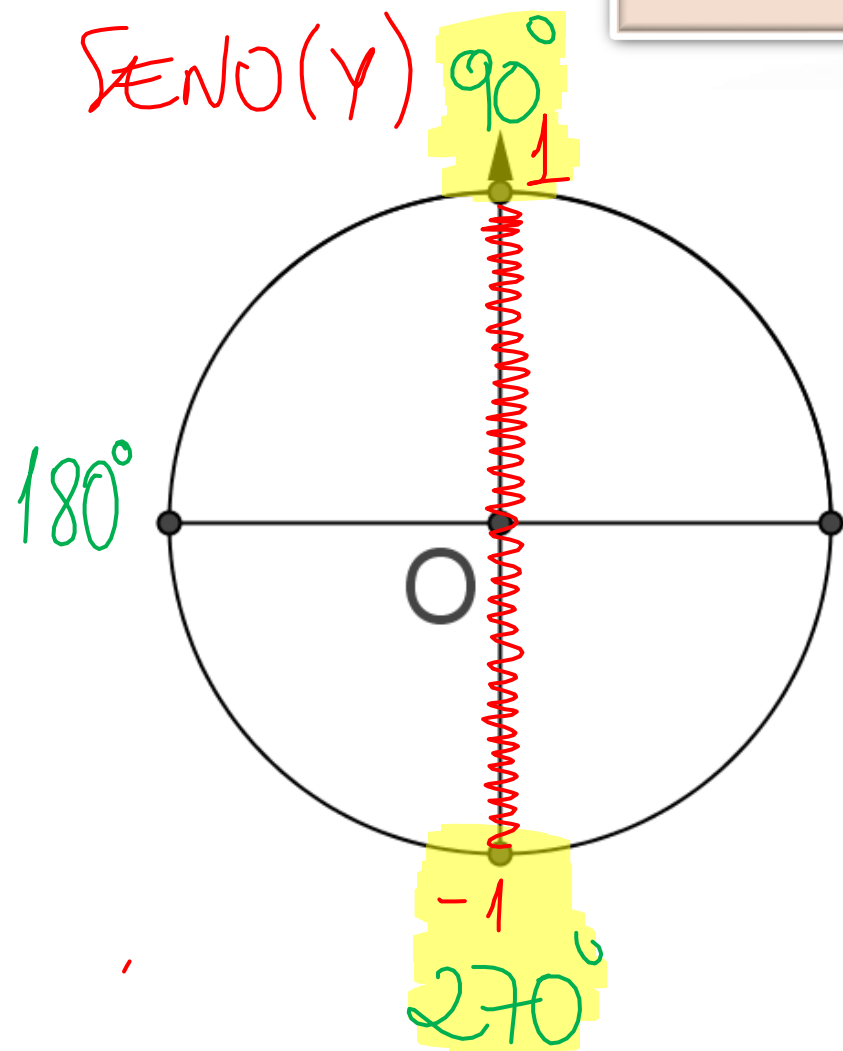


# Cosseno de $30^\circ$ , $45^\circ$ e $60^\circ$ e seus simétricos

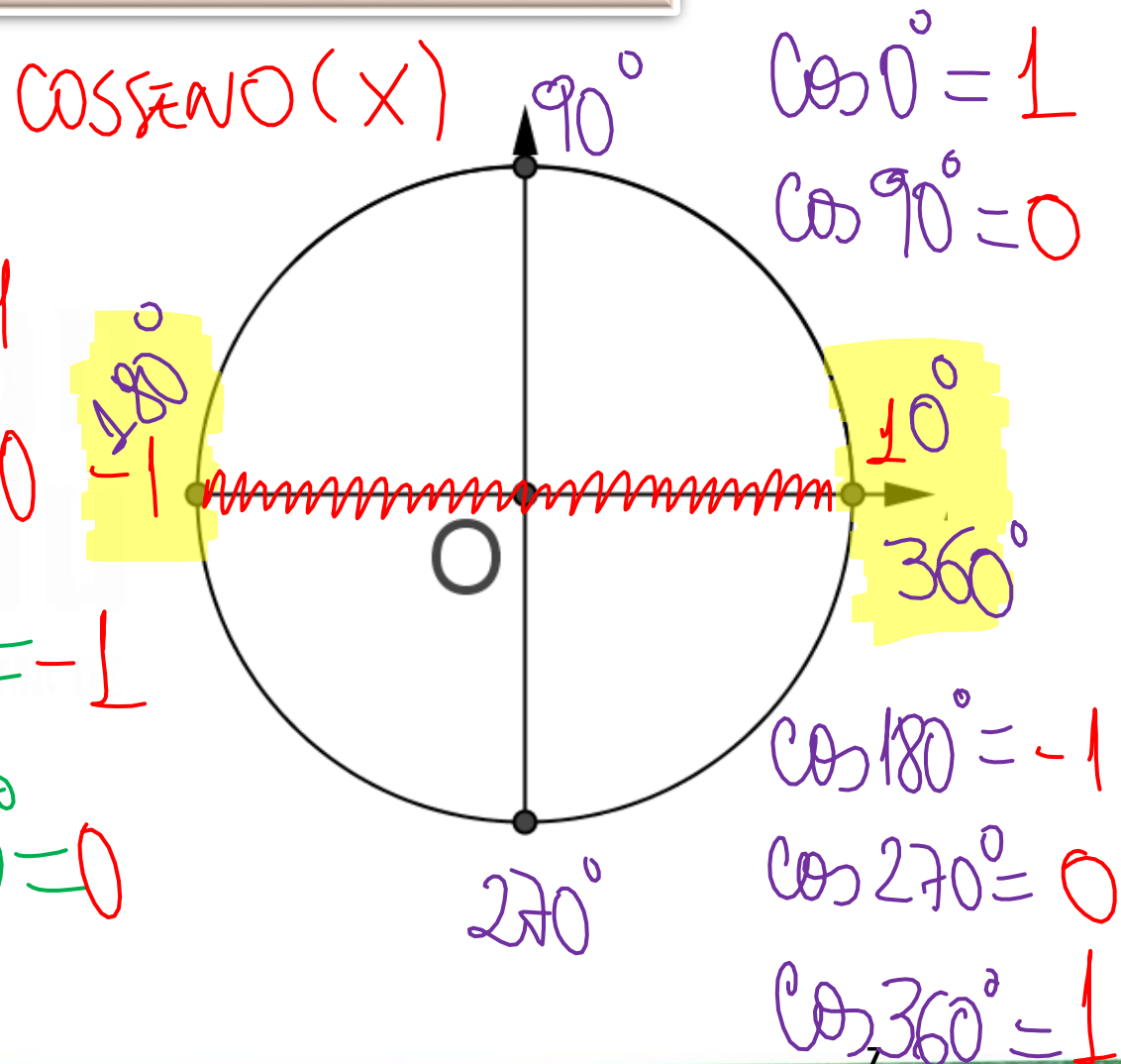


$30^\circ$	$150^\circ$	$210^\circ$	$330^\circ$
$+\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{2}$	$+\frac{\sqrt{3}}{2}$
$45^\circ$	$135^\circ$	$225^\circ$	$315^\circ$
$+\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	$+\frac{\sqrt{2}}{2}$
$60^\circ$	$120^\circ$	$240^\circ$	$300^\circ$
$+\frac{1}{2}$	$-\frac{1}{2}$	$-\frac{1}{2}$	$+\frac{1}{2}$

# Circunferência trigonométrica



$\text{sen } 0^\circ = 0$   
 $\text{sen } 90^\circ = 1$   
 $\text{sen } 180^\circ = 0$   
 $\text{sen } 270^\circ = -1$   
 $\text{sen } 360^\circ = 0$



## EXERCÍCIO 1

Leandro e mais sete amigos saíram para comer uma pizza tamanho GG. Dividiram a pizza em oito fatias iguais.

Sabendo que a pizza tinha o formato circular, o ângulo do arco formado por cada fatia em radianos vale:

~~A)  $\frac{\pi}{4} \text{Rad}$~~

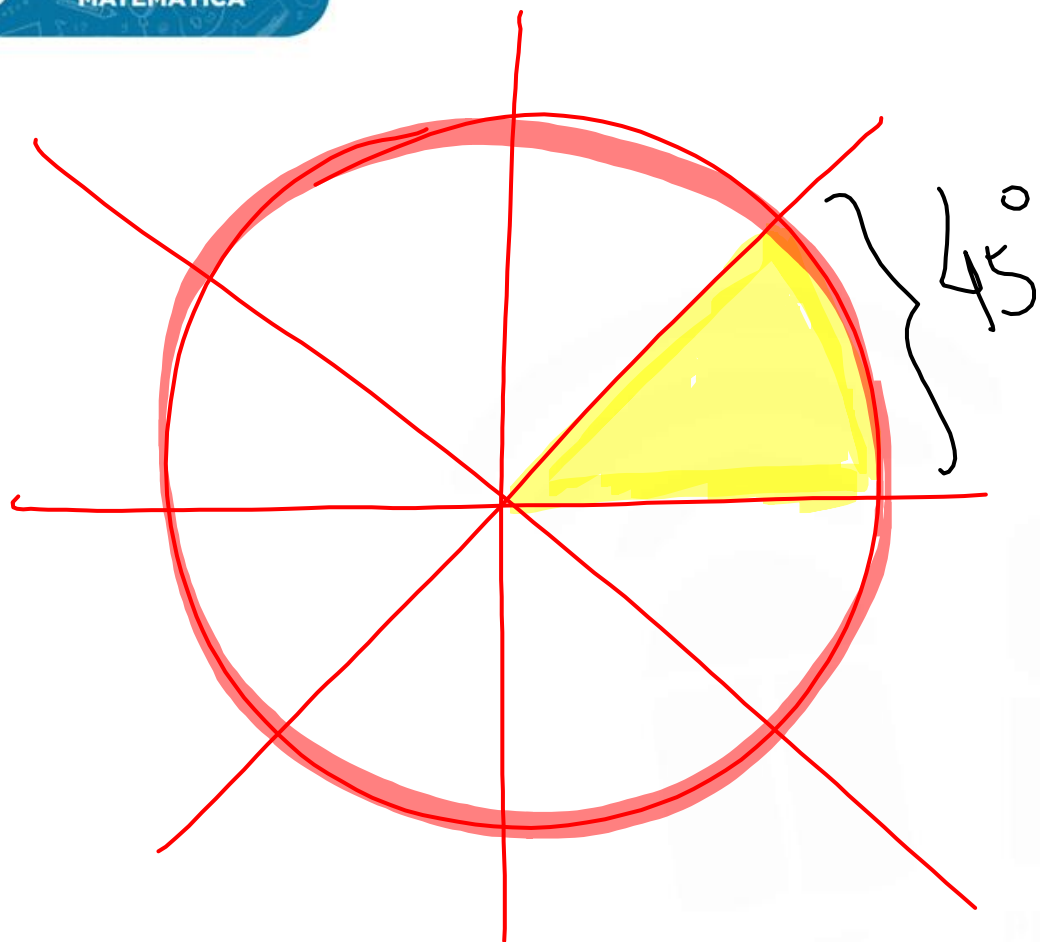
B)  $\frac{\pi}{2} \text{Rad}$

C)  $\frac{\pi}{5} \text{Rad}$

D)  $\frac{2\pi}{3} \text{Rad}$

E)  $\frac{3\pi}{2} \text{Rad}$





$$\frac{360^\circ}{(8)} \quad \bigg| \quad \frac{8}{45^\circ}$$

$$180^\circ - \pi \text{ RAD}$$

$$45^\circ - x$$

$$180x = 45\pi$$

$$x = \frac{45\pi}{180} \div 45$$

$$\Rightarrow \left\{ x = \frac{\pi}{4} \text{ RAD} \right\}$$

$$1 \text{ volta} \Rightarrow 2\pi \text{ RAD}$$

$$\frac{2\pi}{8} = \frac{\pi}{4} \text{ RAD}$$