



## Exercícios: Razões trigonométricas na circunferência

Determine o seno e o cosseno de:

1.  $\frac{7\pi}{4}$

2.  $\frac{5\pi}{6}$

3.  $\frac{2\pi}{3}$

4.  $240^\circ$

5.  $330^\circ$

6.  $-210^\circ$

7.  $135^\circ$

Calcule as expressões:

8.  $\cos 2\pi + 3 \cos \pi - \frac{1}{2} \operatorname{sen} \frac{\pi}{2}$

9.  $\cos 2\pi + \cos \frac{\pi}{3}$

Em cada caso, qual é o maior valor?

10.  $\text{sen } 50^\circ$  ou  $\text{sen } 150^\circ$ ?

11.  $\text{cos } 40^\circ$  ou  $\text{cos } 340^\circ$ ?

Determine os valores de  $x \in [0, 2\pi]$  que satisfazem as equações:

12.  $\text{sen } x = \frac{\sqrt{2}}{2}$

13.  $\text{cos } x = -\frac{1}{2}$

14.  $\text{tg } x = \frac{\sqrt{3}}{3}$

Calcule:

15.  $\text{tg } 150^\circ$

16.  $\text{tg } 300^\circ$

Gabarito:

1.  $-\frac{\sqrt{2}}{2}; \frac{\sqrt{2}}{2}$
2.  $\frac{1}{2}; -\frac{\sqrt{3}}{2}$
3.  $\frac{\sqrt{3}}{2}; -\frac{1}{2}$
4.  $-\frac{\sqrt{3}}{2}; -\frac{1}{2}$
5.  $-\frac{1}{2}; \frac{\sqrt{3}}{2}$
6.  $\frac{1}{2}; -\frac{\sqrt{3}}{2}$

7.  $\frac{\sqrt{2}}{2}; -\frac{\sqrt{2}}{2}$
8.  $-5/2$
9.  $3/2$
10.  $\text{sen } 50^\circ$
11.  $\text{cos } 340^\circ$
12.  $x = \frac{\pi}{4} + 2k\pi$  ou  $x = \frac{3\pi}{4} + 2k\pi, k \in \mathbb{Z}$
13.  $x = \frac{2\pi}{3} + 2k\pi$  ou  $x = \frac{4\pi}{3} + 2k\pi, k \in \mathbb{Z}$
14.  $x = \frac{\pi}{6} + k\pi, k \in \mathbb{Z}$
15.  $-\frac{\sqrt{3}}{3}$
16.  $-\sqrt{3}$