



## Exercícios: Equações trigonométricas em um intervalo definido

1. Determine  $x \in [0, 2\pi]$  tal que  $2 \cdot \operatorname{sen} x = 1$ .

2. Determine  $x$  tal que  $0 < x < \pi$  e  $\operatorname{sen} 3x = \frac{1}{2}$ .

3. Determine  $x$  tal que  $0 < x < 2\pi$  e  $\operatorname{cos} 2x = \frac{1}{2}$ .

4. Obtenha  $x$  tal que  $\operatorname{cos} 3x = \operatorname{cos} 2x$  e  $0 \leq x \leq \pi$ .

Resolva, em  $0 \leq x \leq 2\pi$ , as seguintes equações:

5.  $\operatorname{cos} 2x = \frac{\sqrt{3}}{2}$

6.  $\operatorname{cos} \left( x + \frac{\pi}{6} \right) = 0$

Resolva, para  $x \in [0, 2\pi]$ , as seguintes equações:

7.  $\cos 5x = \cos \left(x + \frac{\pi}{3}\right)$

8.  $\operatorname{tg} 2x = \sqrt{3}$

9.  $\operatorname{tg} 2x = \operatorname{tg} \left(x + \frac{\pi}{4}\right)$

10.  $\operatorname{tg}^2 2x = 3$

Gabarito:

1.  $S = \left\{\frac{\pi}{6}, \frac{5\pi}{6}\right\}$
2.  $S = \left\{\frac{\pi}{18}, \frac{5\pi}{18}, \frac{13\pi}{18}, \frac{17\pi}{18}\right\}$
3.  $S = \left\{\frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}\right\}$
4.  $S = \left\{0, \frac{2\pi}{5}, \frac{4\pi}{5}\right\}$

5.  $S = \left\{\frac{\pi}{12}, \frac{11\pi}{12}, \frac{13\pi}{12}, \frac{23\pi}{12}\right\}$
6.  $S = \left\{\frac{\pi}{3}, \frac{4\pi}{3}\right\}$
7.  $S = \left\{\frac{\pi}{12}, \frac{7\pi}{12}, \frac{13\pi}{12}, \frac{19\pi}{12}, \frac{5\pi}{18}, \frac{11\pi}{18}, \frac{17\pi}{18}, \frac{23\pi}{18}, \frac{29\pi}{18}, \frac{35\pi}{18}\right\}$
8.  $S = \left\{\frac{\pi}{6}, \frac{2\pi}{3}, \frac{7\pi}{6}, \frac{5\pi}{3}\right\}$
9.  $S = \{\emptyset\}$
10.  $S = \left\{\frac{\pi}{6}, \frac{2\pi}{3}, \frac{7\pi}{6}, \frac{5\pi}{3}, \frac{\pi}{3}, \frac{5\pi}{6}, \frac{4\pi}{3}, \frac{11\pi}{6}\right\}$