



Exercícios: Equações trigonométricas redutíveis às fundamentais

Resolva as equações abaixo, no domínio \mathbb{R} :

1. $\text{sen}^2 x = \frac{1}{4}$

2. $\text{sen}^2 x - \text{sen} x = 0$

3. $2\cos^2 x = 1 - \text{sen} x$

4. $4\cos^2 x = 3$

5. $\cos^2 x + \cos x = 0$

7. $\operatorname{sen} x - \sqrt{3} \cdot \cos x = 0$

6. $\operatorname{sen}^2 x = 1 + \cos x$

8. $\operatorname{sen}^2 x = \cos^2 x$

Gabarito:

1. $S = \left\{ x \in \mathbb{R} / x = \frac{\pi}{6} + 2k\pi \text{ ou } x = \frac{5\pi}{6} + 2k\pi \text{ ou } x = \frac{7\pi}{6} + 2k\pi \text{ ou } x = -\frac{\pi}{6} + 2k\pi \right\}$
2. $S = \left\{ x \in \mathbb{R} / x = k\pi \text{ ou } x = \frac{\pi}{2} + 2k\pi \right\}$
3. $S = \left\{ x \in \mathbb{R} / x = \frac{\pi}{2} + 2k\pi \text{ ou } x = -\frac{\pi}{6} + 2k\pi \text{ ou } x = \frac{7\pi}{6} + 2k\pi \right\}$
4. $S = \left\{ x \in \mathbb{R} / x = \pm \frac{\pi}{6} + 2k\pi \text{ ou } x = \pm \frac{5\pi}{6} + 2k\pi \right\}$
5. $S = \left\{ x \in \mathbb{R} / x = \frac{\pi}{2} + k\pi, x = \pi + 2k\pi \right\}$
6. $1 - \cos^2 x = 1 + \cos x \Rightarrow \cos^2 x + \cos x = 0$ e recaímos no anterior.
7. $S = \left\{ x \in \mathbb{R} / x = \frac{\pi}{3} + k\pi \right\}$
8. $S = \left\{ x \in \mathbb{R} / x = \frac{\pi}{4} + k\pi \text{ ou } x = \frac{3\pi}{4} + k\pi \right\}$