

ECUACIONES Y SISTEMAS TRIGONOMÉTRICOS

Resolver las siguientes ecuaciones trigonométricas:

1. $\operatorname{sen} 2x = \cos 60^\circ$
2. $\operatorname{tg} 2x = -\operatorname{tg} x$
3. $\operatorname{sen} x - \cos^2 x = 1/2$
4. $\operatorname{sen} x = \operatorname{sen}(45^\circ - x)$
5. $\operatorname{sen}(x - 45^\circ) = \frac{\sqrt{3}}{2}$
6. $\operatorname{sen} x + \sqrt{3} \cos x = 2$
7. $\operatorname{tg} x \cdot \sec x = \sqrt{2}$
8. $\frac{\operatorname{sen}^2 x}{2} = \frac{\operatorname{tg} x}{2}$
9. $4\operatorname{tg} x = \frac{\sqrt{3}}{\cos^2 x}$
10. $\operatorname{tg}(x - 45^\circ) + \operatorname{tg}(x + 45^\circ) = 2\operatorname{ctg} x$
11. $\cos x \cdot \cos 2x + 2\cos^2 x = 0$
12. $\cos 2x + \operatorname{sen} x = 4\operatorname{sen}^2 x$
13. $2\operatorname{tg} x - 3\operatorname{ctg} x - 1 = 0$
14. $\operatorname{sen} 2x \cdot \cos x = 6\operatorname{sen}^3 x$
15. $\cos x = \frac{2\operatorname{tg} x}{1 + \operatorname{tg}^2 x}$
16. $3\cos x = 2\sec x - 5$
17. $\frac{\operatorname{sen}(x + 30^\circ)}{\cos(x + 60^\circ)} = 1$
18. $4\operatorname{sen} \frac{x}{2} - 2\cos x = 3$
19. $4\operatorname{sen}(x - 30^\circ)\cos(x - 30^\circ) = \sqrt{3}$
20. $\operatorname{tg} \frac{x}{2} = \frac{\operatorname{tg} x - 2}{\operatorname{tg} x + 2}$
21. $3\operatorname{sen}^2 x - 5\operatorname{sen} x + 2 = 0$
22. $\cos 2x = 5 - 6\cos^2 x$
23. $\cos 2x + 5\cos x + 3 = 0$
24. $\frac{\cos x}{\operatorname{tg} x} = \frac{3}{2}$
25. $\operatorname{sen} 6x + \operatorname{sen} 2x = 2\operatorname{sen} 4x$
26. $\cos 2x + \cos x = \operatorname{sen} x + \operatorname{sen} 2x$
27. $\cos 2x - \cos 6x = \operatorname{sen} 5x + \operatorname{sen} 3x$
28. $\cos 8x + \cos 6x = 2\cos 210^\circ \cdot \cos x$
29. $4\operatorname{sen}(x - 30^\circ) \cdot \cos(x - 30^\circ) = \sqrt{3}$
30. $\cos 4x + \cos 2x = \operatorname{sen} 4x - \operatorname{sen} 2x$

Resolver los siguientes sistemas de ecuaciones trigonométricos

1.
$$\begin{cases} \operatorname{sen} x + \cos y = \sqrt{2} \\ \cos x + \sec y = 2\sqrt{2} \end{cases}$$
2.
$$\begin{cases} \operatorname{sen} x \cos y = 3/4 \\ \cos x \operatorname{sen} y = 1/4 \end{cases}$$
3.
$$\begin{cases} \operatorname{sen} x + \operatorname{sen} y = \frac{\sqrt{3} + 1}{2} \\ \operatorname{sen} x - \operatorname{sen} y = \frac{\sqrt{3} - 1}{2} \end{cases}$$
4.
$$\begin{cases} \operatorname{tg} x + \operatorname{tg} y = 1 \\ \operatorname{ctg}(x + y) = 3/4 \end{cases}$$
5.
$$\begin{cases} \operatorname{sen} x - \operatorname{sen} y = 3/2 \\ \cos \frac{x - y}{2} = \frac{\sqrt{3}}{2} \end{cases}$$
6.
$$\begin{cases} \operatorname{tg} 2x = \cot y \\ \operatorname{tg} x = \operatorname{ctg} 2y \end{cases}$$
7.
$$\begin{cases} \operatorname{sen}(x + y) - \cos x \cos y = 0 \\ \operatorname{tg} y = 1 \end{cases}$$
8.
$$\begin{cases} \cos(x + y) = 1/2 \\ \cos(x - y) = 1/2 \end{cases}$$
9.
$$\begin{cases} \operatorname{sen} x + \operatorname{sen} y = 1 \\ 2y = 180^\circ \end{cases}$$
10.
$$\begin{cases} \operatorname{sen} x = \sqrt{2} \operatorname{sen} y \\ \operatorname{tg} x = \sqrt{3} \operatorname{tg} y \end{cases}$$
11.
$$\begin{cases} x + y = \frac{2\pi}{3} \\ \operatorname{sen} x - \operatorname{sen} y = 0 \end{cases}$$
12.
$$\begin{cases} x + y = \pi/4 \\ \sqrt{2} \cos x \cos y = 1 \end{cases}$$