

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. $\operatorname{tg} \frac{x}{2} = \frac{\operatorname{tg} x - 2}{\operatorname{tg} x + 1}$

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.
$$\begin{cases} \operatorname{sen} x + \cos y & \sqrt{2} \\ \cos ecx + \sec y & 2\sqrt{2} \end{cases}$$

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.
$$\begin{cases} \operatorname{sen} x \quad \operatorname{sen} y = 3/2 \\ \cos \frac{x-y}{2} = \frac{\sqrt{3}}{2} \end{cases}$$

6.
$$\begin{cases} \operatorname{tg} 2x = \operatorname{cot} gy \\ \operatorname{tg} x = \operatorname{ctg} 2y \end{cases}$$

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.
$$\begin{cases} \operatorname{sen} x + \operatorname{sen} y = 1 \\ 2 - 2y = 180^\circ \end{cases}$$

10.
$$\begin{cases} \operatorname{sen} x = \sqrt{2}\operatorname{sen} y \\ \operatorname{tg} x = \sqrt{3}\operatorname{tg} y \end{cases}$$

11.
$$\begin{cases} x+y = \frac{2\pi}{3} \\ \operatorname{sen} x - \operatorname{sen} y = 0.5 \end{cases}$$

12.
$$\begin{cases} x+y = \pi/4 \\ \sqrt{2} \cos x \cos y = 1 \end{cases}$$