

Exercices complémentaires : Equations trigonométriques

Résoudre les équations suivantes. Exprimer les solutions dans l'intervalle $[0, 2\pi]$:

1. $2 \sin 2x + 1 = 0$

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

3. $2 \sin \left(\frac{\pi}{6} - 2x \right) = \sqrt{3}$

4. $3 \tan \left(3x - \frac{\pi}{4} \right) = -\sqrt{3}$

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

6. $\sin 4x + \sin x = 0$

7. $\sin \left(3x + \frac{\pi}{6} \right) - \cos \left(x - \frac{\pi}{3} \right) = 0$

8. $2 \cos^2 x - 1 = 0$

9. $\sin^2 x = \cos^2 x$

10. $3 \tan \theta = 2 \cos \theta$

11. $\sin \theta + \sin 2\theta + \sin 3\theta + \sin 4\theta = 0$

12. $\tan 4\theta = 4 \tan \theta$

13. $\cos x = \sin \frac{\pi}{8}$

14. $\sin \left(3x + \frac{\pi}{3} \right) = \sin \left(\frac{2\pi}{3} - x \right)$

15. $2 \sin^2 x + \sin x - 1 = 0$

16. $\sin 2x = \tan x$

17. $\cos 2x = \sin x$

18. $\frac{1 + \sin x}{1 - \sin x} = 3$

19. $\sin 2x \tan x - \tan x - \sin 2x + 1 = 0$

20. $\sin x + \cos x = \frac{\sqrt{2}}{2}$

21. $2 \sin z + 3 \cos z = 1$