

## *Exercices complémentaires : Equations trigonométriques*

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

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