Goniometria 3: EQUAZIONI goniometriche - 4° Liceo Scientifico

Soluzioni SIMULAZIONE

1) $\sqrt{3}ctg^2\,2x + ctg\,2x = 0$ ➜ $ctg\,2x\left(\sqrt{3}ctg\,2x + 1\right) = 0$ ➜ $x = \dfrac{\pi}{4} + k\dfrac{\pi}{2} \vee x = \dfrac{\pi}{3} + k\dfrac{\pi}{2}$

2) $sen^3\,x - sen\,x\cos^2 x = 0$ ➜ $x = k\pi \vee x = \dfrac{\pi}{4} + k\dfrac{\pi}{2}$

3) $\cos 3x - \cos 5x = sen\,6x + sen\,2x$ ➜ prostaferesi $\,sen\,4x\left(\cos 2x - sen\,x\right) = 0\,$ ➜

$x = \dfrac{\pi}{6} + 2k\pi \vee x = \dfrac{5}{6}\pi + 2k\pi \vee x = \dfrac{k\pi}{4}$

4) $\cos^2\left(\dfrac{11}{6}\pi - x\right) + \dfrac{\sqrt{3}}{4}sen\,2x = \cos^2 x$ ➜ $sen^2 x - \cos^2 x = 0$ ➜ $x = \dfrac{\pi}{4} + k\dfrac{\pi}{2}$

5) $tg\left(\dfrac{\pi}{3} + x\right) = tg\left(\dfrac{\pi}{3} - x\right) + 4$ ➜ $x = \dfrac{3}{4}\pi + k\pi \vee x = arctg\,\dfrac{1}{3} + k\pi$

6) $sen\left(3x - \dfrac{\pi}{3}\right) = -sen\left(\dfrac{\pi}{4} + x\right)$ ➜ $x = \dfrac{1}{48}\pi + k\dfrac{\pi}{2} \vee x = \dfrac{19}{24} + k\pi$

7) $sen\,x + \cos x = \dfrac{1}{2}\left(\sqrt{3} + 1\right)$ ➜ $x = \dfrac{1}{6}\pi + 2k\pi \vee x = \dfrac{1}{3}\pi + 2k\pi$

8) $sen^2 x + 7\cos^2 x + 2\sqrt{3}sen\,x \cdot \cos x = 4$ ➜ $x = \dfrac{5}{6}\pi + k\pi \vee x = \dfrac{1}{3}\pi + k\pi$

9) $2\sqrt{2}sen\,x \cdot \cos x = 1$ ➜ $x = \dfrac{\pi}{8} + k\pi \vee x = \dfrac{3}{8}\pi + k\pi$

10) $tg\left(\dfrac{\pi}{4} - \dfrac{x}{2}\right) + sen\,x = 1$ ➜ $x = 2k\pi \vee x = \dfrac{\pi}{2} + 2k\pi$