8/11/2018

267 $\sin\left(x-\frac{\pi}{4}\right)+\cos\left(x-\frac{\pi}{4}\right)-1=0$

$x-\frac{\pi}{4}=y$ $\quad\quad$ $\sin y+\cos y-1=0$

CONTROLLO $\quad y=\pi+2k\pi$

$\sin\pi+\cos\pi-1\overset{?}{=}0$

$0-1-1\overset{?}{=}0$ NON È SOLUZIONE

$$\frac{2t}{1+t^2}+\frac{1-t^2}{1+t^2}-1=0$$

$$\frac{2t+\cancel{1}-t^2-\cancel{1}-t^2}{\cancel{1+t^2}}=0$$

$$-2t^2+2t=0$$

$$t(t-1)=0 \quad t=0 \quad t=1$$

$\tan\frac{y}{2}=0 \quad \frac{y}{2}=k\pi \Rightarrow y=2k\pi$

$\vee \quad\quad\quad \vee$

$\tan\frac{y}{2}=1 \quad \frac{y}{2}=\frac{\pi}{4}+k\pi \Rightarrow y=\frac{\pi}{2}+2k\pi$

$x-\frac{\pi}{4}=2k\pi \quad \vee \quad x-\frac{\pi}{4}=\frac{\pi}{2}+2k\pi$

$$\boxed{x=\frac{\pi}{4}+2k\pi \quad \vee \quad x=\frac{3}{4}\pi+2k\pi}$$

291 $2\sin^2 x + 3\sin x\cos x = 2 + \cos^2 x$

$$2\sin^2 x + 3\sin x\cos x = 2(\cos^2 x + \sin^2 x) + \cos^2 x$$

$$2\sin^2 x + 3\sin x\cos x = 2\cos^2 x + 2\sin^2 x + \cos^2 x$$

$$3\cos^2 x - 3\sin x\cos x = 0$$

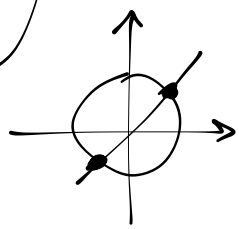
$$\cos^2 x - \sin x\cos x = 0$$

$$\cos x(\cos x - \sin x) = 0$$

$\cos x = 0$ $\vee$ $\cos x - \sin x = 0$

$x = \frac{\pi}{2} + k\pi$ $\vee$ $x = \frac{\pi}{4} + k\pi$

$\left[x = \pm\frac{\pi}{2} + 2k\pi \right]$



432 $\dfrac{\cos 2x - \cos x}{\sin x} = 2\tan\left(x + \frac{\pi}{2}\right)$

C.E.

$$\begin{cases} \sin x \neq 0 \\ x + \frac{\pi}{2} \neq \frac{\pi}{2} + k\pi \end{cases}$$

$$\begin{cases} x \neq k\pi \\ x \neq k\pi \end{cases} \qquad \boxed{x \neq k\pi}$$

$$\frac{\cos 2x - \cos x}{\sin x} = -2\cot x$$

$$\frac{\cos 2x - \cos x}{\sin x} = \frac{-2\cos x}{\sin x}$$

$$\cos 2\alpha = 2\cos^2\alpha - 1$$

$$\frac{\cos 2x - \cos x}{\sin x} = \frac{-2\cos x}{\sin x}$$

$$2\cos^2 x - 1 - \cos x + 2\cos x = 0$$

$$2\cos^2 x + \cos x - 1 = 0$$

$$\cos x = \frac{-1 \pm \sqrt{1+8}}{4} = \frac{-1 \pm 3}{4} = \begin{cases} -1 \\ \frac{1}{2} \end{cases}$$

$\cos x = -1$

$\Downarrow$

$x = \pi + 2K\pi$

C.E. $x \neq K\pi$

$\pi(1+2K)$

N.A. per C.E.

V

$\cos x = \frac{1}{2}$

$\Downarrow$

$$x = \pm\frac{\pi}{3} + 2K\pi$$