

Clase por Discord- 29 de abril

Cálculo de $\operatorname{tg}(5\pi/12)$ usando la definición del reparto

$$\begin{aligned}\operatorname{tg} \frac{5\pi}{12} &= \frac{\operatorname{sen} \frac{5\pi}{12}}{\operatorname{cos} \frac{5\pi}{12}} = \frac{\frac{\sqrt{6}+\sqrt{2}}{4}}{\frac{\sqrt{6}-\sqrt{2}}{4}} = \frac{\sqrt{6}+\sqrt{2}}{\sqrt{6}-\sqrt{2}} \\ &= \frac{\sqrt{6}+\sqrt{2}}{\sqrt{6}-\sqrt{2}} \cdot \frac{\sqrt{6}+\sqrt{2}}{\sqrt{6}+\sqrt{2}} = \frac{(\sqrt{6}+\sqrt{2})^2}{6-2} = \frac{6+2\sqrt{12}+2}{4} \\ &= \frac{8+2\sqrt{12}}{4} = \frac{8+2\cdot\sqrt{3}\cdot\sqrt{4}}{4} = \frac{8+4\sqrt{3}}{4} = \frac{2+\sqrt{3}}{1}\end{aligned}$$

Dominios de Ejercicio 3

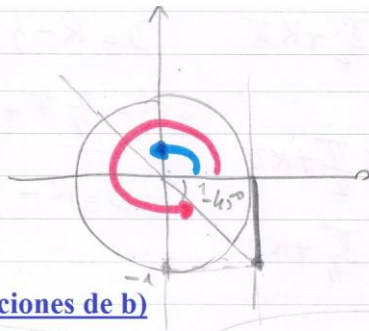
a) \exists $x \neq \frac{\pi}{2} + k\pi$ $D = \mathbb{R} - \left\{ \frac{\pi}{2} + k\pi \right\}$
 $\text{Sol} = \frac{3}{4}\pi + k\pi$

b) \exists $2x \neq \frac{\pi}{2} + k\pi$ $D = \mathbb{R} - \left\{ \frac{\pi}{4} + \frac{k\pi}{2} \right\}$
 $x \neq \frac{\pi}{4} + \frac{k\pi}{2}$
 $\text{Sol} = \frac{3}{8}\pi + \frac{k\pi}{2}$

c) $x \neq \frac{\pi}{2} + k\pi$ $D = \mathbb{R} - \left\{ \frac{\pi}{2} + k\pi \right\}$
 $\text{sol} = \frac{\pi}{3} + k\pi$

d) $\frac{x}{2} \neq \frac{\pi}{2} + k\pi \Rightarrow x \neq \pi + 2k\pi$ $D = \mathbb{R} - \left\{ \pi + 2k\pi \right\}$
 $\text{Sol} = \frac{2\pi}{3} + k2\pi = \frac{(2+6k)\pi}{3} = \frac{2(1+3k)\pi}{3} = \frac{(2k+1)\pi}{3}$

e) $\operatorname{tg} 2x - \operatorname{sen} 2x = 0$
 \exists $2x \neq \frac{\pi}{2} + k\pi \Rightarrow x \neq \frac{\pi}{4} + \frac{k\pi}{2}$
 $D = \mathbb{R} - \left\{ \frac{\pi}{4} + \frac{k\pi}{2} \right\} = \frac{(2k+1)\pi}{4}$



Comparando familias de soluciones de b)

$$x = \frac{3\pi}{8} + K\frac{\pi}{2}$$

$$\frac{7\pi}{8} + \frac{K}{2}\pi$$

$$K=0 \rightarrow \frac{3\pi}{8}$$

$$\rightarrow \frac{7\pi}{8}$$

$$K=1 \rightarrow \frac{3\pi}{8} + \frac{\pi}{2} = \frac{7\pi}{8}$$

$$\rightarrow \frac{7\pi}{8} + \frac{\pi}{2} = \frac{11\pi}{8}$$

$$K=2 \rightarrow \frac{3\pi}{8} + \pi = \frac{11\pi}{8}$$

$$\rightarrow \frac{7\pi}{8} + \pi = \frac{15\pi}{8}$$

$$K=3 \rightarrow \frac{3\pi}{8} + \frac{3\pi}{2} = \frac{15\pi}{8}$$

$$K=-1 \rightarrow \frac{7\pi}{8} - \frac{1}{2}\pi = \frac{3\pi}{8}$$

$$\text{Sol} = \frac{3\pi}{8} + K\frac{\pi}{2} = \frac{(3+4K)\pi}{8}$$

Terminando d)

$$\text{sen } 2x = 0$$

$$2x = 0 + 2K\pi \rightarrow x = 0 + K\pi$$

$$2x = \pi + 2K\pi \rightarrow x = \frac{\pi}{2} + K\pi$$

$$2x = 2\pi + 2K\pi \rightarrow x = \pi + K\pi$$

$$x = K\pi$$

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

$$S = K\pi, K \in \mathbb{Z}$$

$$\frac{\pi}{2} + K\pi, K \in \mathbb{Z}$$

$$1 - 1 = 0$$

$$\cos 2x$$

$$\frac{1 - \cos 2x}{\cos 2x} = 0$$

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

$$\cos 2x = 1$$

$$2x = 0 + 2K\pi \quad 2x = 2\pi + 2K\pi$$

$$x = 0 + K\pi \quad x = \pi + K\pi$$

$$x = K\pi \quad x = (K+1)\pi$$

$$\frac{(3+4K)\pi}{8}$$

$$\frac{(K+1)\pi}{4}$$

$$\frac{3+4K}{2}$$

$$K+1$$

Ejercicio 4

