

$$g'(x) = (x \cdot \tan x - \sqrt{x} \sin x) \quad f'(\tan^2 x + \sqrt{x} \cos x) \quad x = \frac{\pi}{6}$$

$$(x-1)f'(x) = \sqrt{x} \Rightarrow f'(x) = \sqrt{x}$$

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$$\frac{(1+\cos x)(1-x \cos x + \cos^2 x)}{(1+\cos x)(1-\cos x)} \Rightarrow \frac{1-x \cos x + \cos^2 x}{1-\cos x} - \frac{f(x)}{1-\cos x} \Rightarrow$$

$$\frac{-x \cos x + \cos^2 x}{1-\cos x} \Rightarrow \frac{-\cos^2(1-\cos x)}{1-\cos x} \Rightarrow -\cos x = f'(x) \quad (f-xg) \Rightarrow$$

$$+\sin x \Rightarrow x = \frac{\pi}{2} = \frac{1}{2}$$

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$$x\sqrt{x} = x^\alpha \Rightarrow \alpha = \sqrt{x} \Rightarrow \frac{1}{2} \Rightarrow (x^\alpha - x)\sqrt{x} \Rightarrow f'(x) \quad f\sqrt{x} = 0 \Rightarrow$$

$$x = \frac{\pi}{2} \Rightarrow f\sqrt{\frac{\pi}{2}} a = \sqrt{x} \Rightarrow a = \frac{1}{\sqrt{2}}$$

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$$y = -ax + 1 \Rightarrow f(x) + f'(x) \Rightarrow (-ax + 1) + (-a) \Rightarrow -ax + 1 = -1$$

$$a = \frac{\pi}{2}$$

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$$y = \frac{x+\omega}{V} \Rightarrow \frac{(x)(x+1) - (x)(x-1)}{x^2+1} = \frac{1}{V} \Rightarrow Va = x^2 + 1 \Rightarrow$$

$$\frac{ax-1}{x^2+1} = \frac{x+\omega}{V} \Rightarrow Van - V = x^2 + 1 + \omega x + \omega \Rightarrow (Va = x^2 + 1) \Rightarrow$$

$$12 - 4x = 0 \Rightarrow x = 3 \Rightarrow x^2 + 1 = 10 \Rightarrow 9 + 1 = 10 = Va \Rightarrow a = 3$$

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$$f' \Rightarrow \sqrt{x} + a \Rightarrow x=2 \Rightarrow 1 + a = 0 \Rightarrow \underline{a = -1} \quad / \quad 1 + \underset{-1}{a} - b \Rightarrow \underline{b = -1}$$

$$b - a = -1 - (-1) = \underline{0}$$

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$$\frac{\sqrt{x}+1}{\sqrt{x}-1} \stackrel{\text{Sturm}}{\Rightarrow} \left(\frac{1}{\sqrt{x}}\right)(\sqrt{x}-1) - \left(\frac{1}{\sqrt{x}}\right)(\sqrt{x}+1) \Rightarrow \frac{-1}{(\sqrt{x})(\sqrt{x}-1)} \stackrel{\text{Sturm}}{=}$$

$$\frac{\sqrt{x}-1}{x\sqrt{x}(\sqrt{x}-1)} = \frac{1}{x\sqrt{x}}$$

$$\frac{\sqrt{x}-1}{x\sqrt{x}(\sqrt{x}-1)} \stackrel{\text{Sturm}}{=} \frac{(x+\omega\sqrt{x})(\sqrt{x}-1)}{x\sqrt{x}}$$

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$$\frac{\sqrt{x}+1}{\sqrt{x}}$$

$$\Rightarrow 1 / -1 \Rightarrow (1)(-a+1) = 1 \Rightarrow a = \underline{-1}$$

$$-ka=1 \Rightarrow \sqrt{x+1} \cdot (x)(ax+1) + (a)(x+1) \Rightarrow 1 - k = \underline{1}$$

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$$\frac{y_2 - y_1}{x_2 - x_1}$$

$$\sin x \cos x \rightarrow 0 \quad \left\{ \begin{array}{l} \sin^2 x - \cos^2 x \rightarrow 1 \\ \sin^2 x - \cos^2 x \rightarrow -1 \end{array} \right.$$

$$\Rightarrow \frac{y_2 - y_1}{x_2 - x_1} \Rightarrow \frac{1}{-1} = \underline{-1}$$

$$\frac{y_2 - y_1}{x_2 - x_1}$$

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