

$$f(x) = \sqrt{x} - f(x) \quad f\left(\sin \frac{\pi}{4} + \cos \frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}$$

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

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$$f(x) = \frac{x+1}{x-1} \quad f(a) = \frac{a+1}{a-1}$$

$$f(f(a)) = a \quad f(f(a)) = \frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1} = \frac{a+1+a-1}{a-1} = \frac{2a}{a-1} = a$$

$$IR - \{1\}$$

$$d-1 \neq 0 \quad a \neq 1$$

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$$f(x) = \sqrt{x} - f(x) \quad f(g(a)) = -f(\sqrt{a^2-1}) =$$

$$g(x) = \sqrt{x^2-1} \quad a=1 \quad (\sqrt{a^2-1})^2 - f(\sqrt{a^2-1}) = a^2-1 - f(\sqrt{a^2-1}) = -f$$

$$g(a) = \sqrt{a^2-1}$$

$$a^2-1 - f(\sqrt{a^2-1}) + f = 0$$

$$+f - f + f = 0$$

$$(f-f)^2 = 0$$

$$(\sqrt{a^2-1}-f)^2 = 0$$

$$\sqrt{a^2-1} = f$$

$$a^2-1 = f^2$$

$$a^2 = 1 \Rightarrow a = \pm 1$$

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$$f(x+y) = x^2 - ax + y$$

$$f(x) \times f(-y) = ?$$

$$f = x + y$$

$$\Rightarrow x = 1$$

$$-y = x + y$$

$$\Rightarrow x = -y$$

$$(x-y)(x-y) = y$$

$$(x-y)(x-y) = 0 \vee y$$

$$x = y$$

$$x = -y$$

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$$f(\cos x + a \sin x) = \tan x \quad \sin x = \frac{1}{\sqrt{2}} \quad \cos x = \frac{1}{\sqrt{2}} \quad \cos x = \frac{1}{\sqrt{2}}$$

$$f(\cos x + a \sin x) = \tan x$$

$$\cos x + a \sin x - \tan x = 0$$

$$\cos x + a \sin x - 1 = 0$$

$$(\cos x + 1)(\cos x - 1) = 0$$

$$\cos x = 1$$

$$\cos x = -1$$

$$x = 0$$

$$x = \pi$$

$$\Rightarrow \tan x = 0$$