

$$\cos^2 x + \sin^2 x = ? \quad ? \quad ?$$

$$?? = ??$$

???

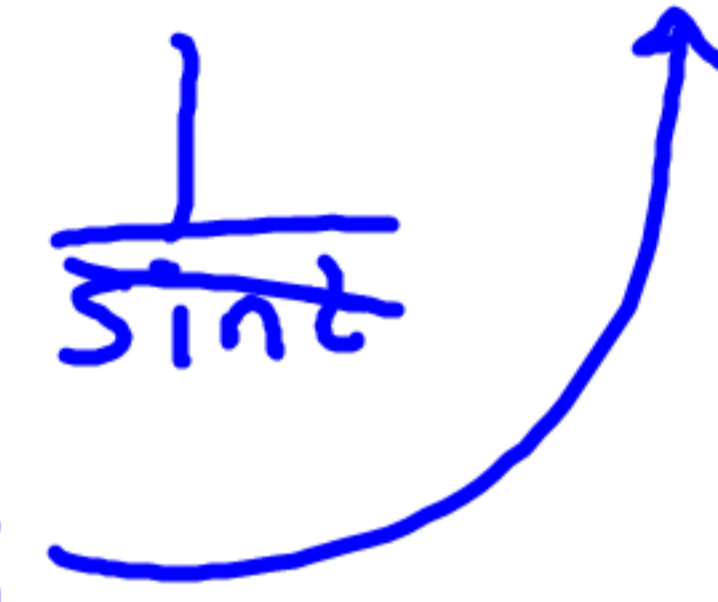
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$$\frac{\sin x}{\cos x} \Rightarrow \tan x$$

$$\sin t \csc t = 1$$


~~$\sin t$~~ $\frac{1}{\frac{1}{\sin t}}$



$$(1 + \sin \alpha)(1 - \sin \alpha) = \cos^2 \alpha$$

$1 - \sin^2 \alpha$

$\cos^2 \alpha$



#5

$$\cos^2 \beta - \sin^2 \beta = 1 - 2\sin^2 \beta$$

$$1 - \sin^2 \beta - \sin^2 \beta$$

$$1 - 2\sin^2 \beta$$



#9

$$\frac{\csc^2 \theta}{\cot^2 \theta} = \csc \theta \sec \theta$$

$$\frac{\frac{1}{\sin^2 \theta}}{\frac{\cos \theta}{\sin \theta}}$$

$$\frac{1}{\sin \theta} \cdot \frac{\sin \theta}{\cos \theta}$$

$$\csc \theta \cdot \sec \theta$$



#15

$$\frac{1}{\sec x \tan x} = \csc x - \sin x$$
$$\frac{\cos x \cot x}{\frac{\cos x}{1} \frac{\cos x}{\sin x}} = \frac{1}{\sin x} - \frac{\sin x}{1} \left(\frac{\sin x}{\sin x} \right)$$
$$\frac{\cos^2 x}{\sin x} = \frac{1 - \sin^2 x}{\sin x}$$
$$\frac{\cos^2 x}{\sin x} = \frac{\cos^2 x}{\sin x}$$

H15B

$$\frac{1}{\sec x + \tan x}$$

$$= \csc x - \sin x$$
$$\frac{1}{\sin x} - \sin x \left(\frac{\sin x}{\sin x} \right)$$

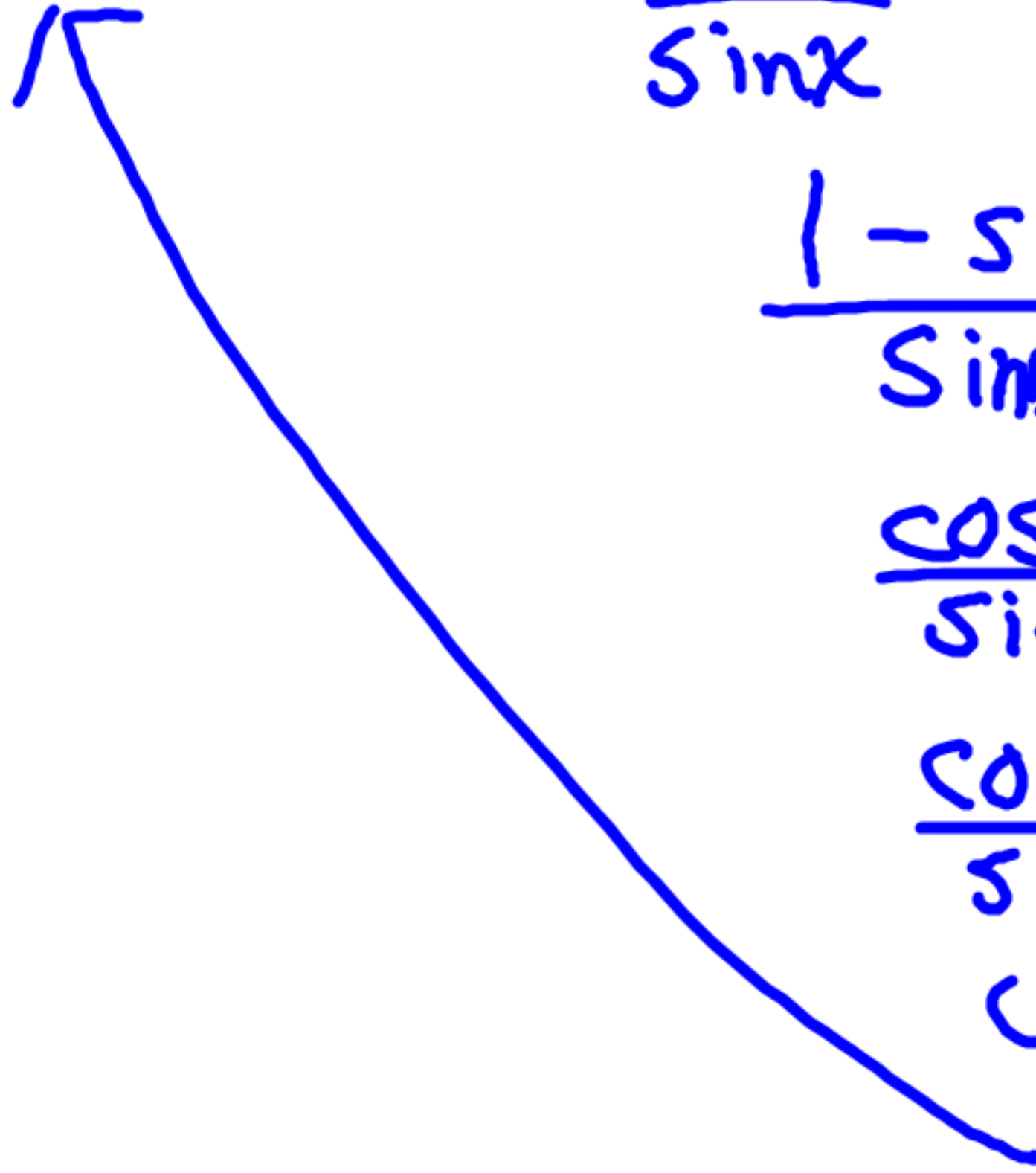
$$\frac{1 - \sin^2 x}{\sin x}$$

$$\frac{\cos^2 x}{\sin x}$$

$$\frac{\cos x}{\sin x} \cdot \frac{\cos x}{1}$$

$$\cot x \cdot \cos x$$

$$\frac{1}{\tan x} \cdot \frac{1}{\sec x}$$



$$\#7 \quad \sin^2 \alpha - \sin^4 \alpha = \cos^2 \alpha - \cos^4 \alpha$$

$$\sin^2 \alpha (1 - \sin^2 \alpha) =$$

$$\sin^2 \alpha \cos^2 \alpha$$

$$(1 - \cos^2 \alpha) \cos^2 \alpha$$

$$\cos^2 \alpha - \cos^4 \alpha$$



#13

$$\sin^{\frac{1}{2}} x \cos x - \sin^{\frac{5}{2}} x \cos x = \cos^3 x \sqrt{\sin x}$$

$$\sin^{\frac{1}{2}} x \cos x (1 - \sin^2 x)$$

$$\sin^{\frac{1}{2}} x \cos x \cos^2 x$$
$$\sqrt{\sin x} \cos^3 x$$

$$\sin^{\frac{5}{2}} x$$
$$\sin^2 x \sin x \cos x$$

#1)

$$\frac{\cot^2 t}{\csc t} =$$

$$\csc t - \sin t$$

$$\frac{1}{\sin t} - \sin t \left(\frac{\sin t}{\sin t} \right)$$

~~$\cot t \cdot \cos t$~~

$$1 - \sin^2 t$$

$$\frac{1 - \sin^2 t}{\sin t}$$

$$\frac{\cos^2 t}{\sin t}$$

~~$\frac{\cos t \cdot \cos t}{\sin t} = \cot t \cdot \cos t$~~

$$\frac{\cot^2 t}{\csc t} = \csc t - \sin t$$