

$$\checkmark 7) \frac{\sin x + \cos x}{\sin x} = 1 + \frac{1}{\tan x} \checkmark$$

$$\checkmark 8) \frac{\cos x}{\cot x} = \sin x.$$

$$9) \frac{\sin x}{\csc x} + \frac{\cos x}{\sec x} = 1.$$

$$10) \frac{\tan x}{\sin x} = \sec x.$$

$$11) \frac{\sec y}{\tan y + \cot y} = \sin y.$$

$$12) \frac{\csc x}{\cot x} = \sec x.$$

$$13) \frac{1 - \sin x}{\cos x} = \frac{\cos x}{1 + \sin x}.$$

$$14) \sin^2 z = \frac{1 - \cos^2 z}{\csc^2 z}.$$

$$15) \sec x (1 - \sin^2 x) = \cos x.$$

$$16) \tan x \cdot \cos z \cdot \csc z = 1.$$

Ejemplo:

$$1 + \cos x = \tan x \quad \boxed{\text{NO}} \checkmark$$

contra-ejemplo

$$x = 0 \checkmark$$

$$1 + \cos 0 \neq \tan 0$$

$$1 + 1 \neq 0$$

$$2 \neq 0$$

$$\star \frac{\sin x + \cos x}{\sin x} = 1 + \frac{1}{\tan x} \checkmark$$

$$1 + \frac{1}{\tan x} = 1 + \frac{\frac{1}{\sin x}}{\frac{\cos x}{\sin x}}$$

$$= \frac{1}{1} + \frac{\cos x}{\sin x}$$

$$= \frac{\sin x + \cos x}{\sin x} \checkmark$$

Recordar:

$$\star \tan x = \frac{\sin x}{\cos x}$$

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

$$\cot x = \frac{\cos x}{\sin x} \quad \text{I.O.}$$

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

$$\Rightarrow \frac{\frac{\cos x/1}{\cos x}}{\sin x} = \sin x$$

$$\Rightarrow \frac{\cancel{\cos x} \cdot \sin x}{\cancel{\cos x}} = \sin x$$

$$\Rightarrow \boxed{\sin x = \sin x}$$

$$\sec x (1 - \sin^2 x) = \cos x$$

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

$$\Rightarrow \frac{1 \rightarrow (\cos^2 x)}{\cos x \rightarrow 1} = \cos x$$

$$\Rightarrow \frac{\cos^2 x}{\cos x} = \cos x$$

$$\Rightarrow \boxed{\cos x = \cos x}$$

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

$$\sin^2 x + \cos^2 x = 1$$

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