IDENTIDADES AUXILIARES

Demostrar: $\boxed{Tanx+Ctgx=Secx.Cscx}$

$\boxed{Sen^2x+Cos^2x = 1}$

$$Tanx+Ctgx = \frac{Senx}{Cosx} + \frac{Cosx}{Senx}$$

$$Tanx+Ctgx = \frac{SenxSenx + CosxCosx}{CosxSenx}$$

$$Tanx+Ctgx = \frac{1}{CosxSenx}$$

$$Tanx+Ctgx = \frac{1}{Cosx}\cdot\frac{1}{Senx}$$

$$Tanx+Ctgx = Secx.\ Cscx \qquad \text{lqqd}$$

Demostrar: $\boxed{Sec^2x+Csc^2x=Sec^2x.Csc^2x}$

$$Sec^2x+Csc^2x= \frac{1}{CosxCosx} + \frac{1}{SenxSenx}$$

$$Sec^2x+Csc^2x= \frac{SenxSenx + CosxCosx}{CosxCosxSenxSenx}$$

$$Sec^2x+Csc^2x= \frac{1}{CosxCosxSenxSenx}$$

$$Sec^2x+Csc^2x= \frac{1}{CosxCosx}\cdot\frac{1}{SenxSenx}$$

$$Sec^2x+Csc^2x= Sec^2x\ .Csc^2x \qquad \text{lqqd}$$

IDENTIDADES AUXILIARES

Demostrar: $\boxed{Sen^4x+Cos^4x=1-2Sen^2x.Cos^2x}$

Sabemos: $\boxed{Sen^2x + Cos^2x = 1}$

$$(Sen^2x + Cos^2x)^2= 1^2$$

$$Sen^4x + Cos^4x + 2Sen^2xCos^2x=1$$

$$Sen^4x + Cos^4x=1- 2Sen^2xCos^2x \qquad \text{lqqd}$$

$\boxed{(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3}$

Demostrar: $\boxed{Sen^6x+Cos^6x=1-3Sen^2x.Cos^2x}$

Sabemos: $Sen^2x + Cos^2x = 1$

$$(Sen^2x + Cos^2x)^3= 1^3$$

$$Sen^6x + Cos^6x +3Sen^2xCos^2x(Sen^2x + Cos^2x)= 1$$

$$Sen^6x + Cos^6x +3Sen^2xCos^2x(1)= 1$$

$$Sen^6x + Cos^6x +3Sen^2xCos^2x= 1$$

$$Sen^6x + Cos^6x =1 - 3Sen^2xCos^2x.........\text{lqqd}$$

Demostrar: $\boxed{(1+Senx+Cosx)^2=2(1+Senx)(1+Cosx)}$

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + ac+bc)$

$(1+Senx+Cosx)^2=1^2+Sen^2x+Cos^2x+2(Senx+Cosx+SenxCosx)$

$(1+Senx+Cosx)^2=1+1+2(Senx+Cosx+SenxCosx)$

$(1+Senx+Cosx)^2=2+2(Senx+Cosx+SenxCosx)$

$(1+Senx+Cosx)^2=2+2Senx+2Cosx+2SenxCosx)$

$(1+Senx+Cosx)^2=2(1+Senx)+2Cosx(1+Senx)$

$(1+Senx+Cosx)^2=(1+Senx)(2+2Cosx)$

$(1+Senx+Cosx)^2=2(1+Senx)(1+Cosx)$ lqqd

Demostrar: $\boxed{(1+Senx-Cosx)^2=2(1+Senx)(1-Cosx)}$

$(a + b - c)^2 = a^2 + b^2 + c^2 + 2(ab - ac -bc)$

$(1+Senx-Cosx)^2=1^2+Sen^2x+Cos^2x+2(Senx-Cosx-SenxCosx)$

$(1+Senx-Cosx)^2=1+1+2(Senx-Cosx-SenxCosx)$

$(1+Senx-Cosx)^2=2+2(Senx-Cosx-SenxCosx)$

$(1+Senx-Cosx)^2=2+2Senx-2Cosx-2SenxCosx)$

$(1+Senx-Cosx)^2=2(1+Senx)-2Cosx(1+Senx)$

$(1+Senx-Cosx)^2=(1+Senx)(2-2Cosx)$

$(1+Senx-Cosx)^2=2(1+Senx)(1-Cosx)$ lqqd

Demostrar: $\boxed{(1-Senx+Cosx)^2=2(1-Senx)(1+Cosx)}$

$(a - b + c)^2 = a^2 + b^2 + c^2 - 2(ab + ac - bc)$

$(1-Senx+Cosx)^2=1^2+Sen^2x+Cos^2x-2(Senx-Cosx+SenxCosx)$

$(1-Senx+Cosx)^2=1+1-2(Senx-Cosx+SenxCosx)$

$(1-Senx+Cosx)^2=2-2(Senx-Cosx+SenxCosx)$

$(1-Senx+Cosx)^2=2-2Senx+2Cosx-2SenxCosx$

$(1-Senx+Cosx)^2=2(1-Senx)+2Cosx(1-Senx)$

$(1-Senx+Cosx)^2=(1-Senx)(2+2Cosx)$

$(1-Senx+Cosx)^2=2(1-Senx)(1+Cosx)$ lqqd

Demostrar: $\boxed{(1-Senx-Cosx)^2=2(1-Senx)(1-Cosx)}$

$(a - b - c)^2 = a^2 + b^2 + c^2 - 2(ab + ac - bc)$

$(1-Senx-Cosx)^2=1^2+Sen^2x+Cos^2x-2(Senx +Cosx-SenxCosx)$

$(1-Senx-Cosx)^2=1+1-2(Senx +Cosx-SenxCosx)$

$(1-Senx-Cosx)^2=2-2(Senx +Cosx-SenxCosx)$

$(1-Senx-Cosx)^2=2-2Senx-2Cosx+2SenxCosx$

$(1-Senx-Cosx)^2=2(1-Senx)-2Cosx(1-Senx)$

$(1-Senx-Cosx)^2=(1-Senx)(2-2Cosx)$

$(1-Senx-Cosx)^2=2(1-Senx)(1-Cosx)$ lqqd

 Ing. ALFREDO QUISPE JAUREGUI

Demostrar: $\boxed{\dfrac{\text{Cosx}}{1+\text{Senx}} = \dfrac{1-\text{Senx}}{\text{Cosx}}}$

$$\frac{\text{Cosx}\,(1-\text{Senx})}{(1+\text{Senx})(1-\text{Senx})}$$

$$\frac{\text{Cosx}\,(1-\text{Senx})}{1-\text{Sen}^2x}$$

$$\frac{\text{Cosx}\,(1-\text{Senx})}{\text{Cos}^2x}$$

$$\frac{1-\text{Senx}}{\text{Cosx}}$$

Demostrar: $\boxed{\dfrac{\text{Cosx}}{1-\text{Senx}} = \dfrac{1+\text{Senx}}{\text{Cosx}}}$

$$\frac{\text{Cosx}\,(1+\text{Senx})}{(1-\text{Senx})\,(1+\text{Senx})}$$

$$\frac{\text{Cosx}\,(1+\text{Senx})}{1-\text{Sen}^2x}$$

$$\frac{\text{Cosx}\,(1+\text{Senx})}{\text{Cos}^2x}$$

$$\frac{1+\text{Senx}}{\text{Cosx}}$$

Demostrar: $\boxed{\dfrac{\text{Senx}}{1+\text{Cosx}} = \dfrac{1-\text{Cosx}}{\text{Senx}}}$

$$\frac{\text{Senx}\,(1-\text{Cosx})}{(1+\text{Cosx})(1-\text{Cosx})}$$

$$\frac{\text{Senx}\,(1-\text{Cosx})}{1-\text{Cos}^2x}$$

$$\frac{\text{Senx}\,(1-\text{Cosx})}{\text{Sen}^2x}$$

$$\frac{1-\text{Cosx}}{\text{Senx}}$$

Demostrar: $\boxed{\dfrac{\text{Senx}}{1-\text{Cosx}} = \dfrac{1+\text{Cosx}}{\text{Senx}}}$

$$\frac{\text{Senx}\,(1+\text{Cosx})}{(1-\text{Cosx})\,(1+\text{Cosx})}$$

$$\frac{\text{Senx}\,(1+\text{Cosx})}{1-\text{Cos}^2x}$$

$$\frac{\text{Senx}\,(1+\text{Cosx})}{\text{Sen}^2x}$$

$$\frac{1+\text{Cosx}}{\text{Senx}}$$

IDENTIDADES AUXILIARES

$Tanx+Ctgx=Secx.Cscx$

$Sec^2x+Csc^2x=Sec^2x.Csc^2x$

$Sen^4x+Cos^4x=1-2Sen^2x.Cos^2x$

$Sen^6x+Cos^6x=1-3Sen^2x.Cos^2x$

$(1+Senx+Cosx)^2=2(1+Senx)(1+Cosx)$

$(1+Senx-Cosx)^2=2(1+Senx)(1-Cosx)$

$(1-Senx+Cosx)^2=2(1-Senx)(1+Cosx)$

$(1-Senx-Cosx)^2=2(1-Senx)(1-Cosx)$

Las identidades trigonométricas auxiliares adicionales

$$\frac{Cosx}{1+Senx}=\frac{1-Senx}{Cosx}$$

$$\frac{Cosx}{1-Senx}=\frac{1+Senx}{Cosx}$$

$$\frac{Senx}{1+Cosx}=\frac{1-Cosx}{Senx}$$

$$\frac{Senx}{1-Cosx}=\frac{1+Cosx}{Senx}$$