Odd/Even Function Ident

1) $\sin(-u) = -\sin u$

3) $\tan(-u) = -\tan u$

5) $\sec(-u) = \sec u$

2) $\cos(-u) = \cos u$

4) $\csc(-u) = -\csc u$

6) $\cot(-u) = -\cot u$

Here are some trigonometric sum and difference formul

$$\sin(A+B) = \sin A \cos B + \cos A \sin B$$

$$\sin(A-B) = \sin A \cos B - \cos A \sin B$$

$$\cos(A+B) = \cos A \cos B - \sin A \sin B$$

$$\cos(A-B) = \cos A \cos B + \sin A \sin B$$

$$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$\sec^2 x + \csc^2 x = \sec^2 x \csc^2 x$

1) $\sin^2 u + \cos^2 u = 1$

2) $1 + \tan^2 u = \sec^2 u$

3) $1 + \cot^2 u = \csc^2 u$

$\dfrac{1}{\cos^2 x} + \dfrac{1}{\sin^2 x}$ R

$\dfrac{\sin^2 x + \cos^2 x}{\cos^2 x \sin^2 x}$ A

$\dfrac{1}{\cos^2 x \sin^2 x}$ P

$\sec^2 x \csc^2 x$ R ✓

$$\frac{\sec x+\cos x}{\sec x-\cos x}=\frac{1+\cos^2 x}{\sin^2 x}$$

R

A

$$\frac{\frac{1}{\cos x}+\cos x}{\frac{1}{\cos x}-\cos x}\cdot\frac{(\cos x)}{(\cos x)}=\frac{1+\cos^2 x}{1-\cos^2 x}$$

$$\frac{1+co^2 x}{\sin^2 x}$$

P

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

$$\frac{(\tan x)(\sec x - 1)}{(\sec x + 1)(\sec x - 1)} \rightarrow \sec^2 x - 1 \qquad A$$

$$\frac{(\tan x)(\sec x - 1)}{\sec^2 x - 1} \rightarrow \tan^2 x \qquad P$$

$$\frac{\tan x(\sec x - 1)}{\tan^2 x} = \frac{\sec x - 1}{\tan x} \qquad A$$

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

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

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

$$\boxed{\csc x - \cot x}$$

$$\cos^2 x \neq \cos x^2$$
$$= (\cos x)^2$$

$$\cos(-x) \neq -\cos x$$

$$\sec(-x) - \sin(-x)\tan(-x) = \cos x$$

$$\sec x - (-\sin x)(-\tan x)$$

$$\sec x - \sin x \tan x \qquad O/E$$

$$\sec x - \sin x \left(\frac{\sin x}{\cos x}\right) \qquad Q$$

$$\frac{1}{\cos x} - \sin x \left(\frac{\sin x}{\cos x}\right) \qquad R$$

$$\frac{1 - \sin^2 x}{\cos x} \quad A \rightarrow \frac{\cos^2 x}{\cos x} \quad P \rightarrow \cos x \quad A$$

$$\csc(-x) - \sin(-x) = -\cos x \cot x$$

$-\csc x + \sin x$ O/E

$\frac{-1}{\sin x} + \sin x$ R

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

$-(\cos^2 x)$

$\frac{-\cos^2 x}{\sin x}$ P $\rightarrow \frac{-\cos x \cos x}{\sin x}$

$-\cos x \cot x$ Q

$$\cos 27° \cos 18° - \sin 27° \sin 18°$$

$A = 27°$ $B = 18°$

$\cos(27 + 18)$

$\cos(45) = \frac{\sqrt{2}}{2}$

Here are some trigonometric sum and difference formu

$$\sin(A+B) = \sin A \cos B + \cos A \sin B$$

$$\sin(A-B) = \sin A \cos B - \cos A \sin B$$

$$\cos(A+B) = \cos A \cos B - \sin A \sin B$$

$$\cos(A-B) = \cos A \cos B + \sin A \sin B$$

$$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

A B

$$\frac{\tan 167° - \tan 137°}{1 + \tan 167° \tan 137°}$$

$\tan(167 - 137) = \tan(30) = \sqrt{3}/3$

Use the information given below to find $\cos(\alpha+\beta)$.

$\tan\alpha = \frac{3}{4}$, with α in quadrant III

$\cos\beta = \frac{5}{13}$, with β in quadrant I

$\operatorname{Tan} A = \frac{3}{4}$ $\quad \frac{y=-3}{x=-4}$ $\quad r=5$

$\sin A = -3/5$ $\quad \cos A = -4/5$

$\cos B = \frac{5}{13}$ $\quad x=5$ $\quad y=12$ $\quad r=13$

$\sin B = \frac{12}{13}$

Here are some trigonometric sum and difference formulas.

$$\sin(A+B) = \sin A\cos B + \cos A\sin B$$

$$\sin(A-B) = \sin A\cos B - \cos A\sin B$$

$$\cos(A+B) = \cos A\cos B - \sin A\sin B$$

$$\cos(A-B) = \cos A\cos B + \sin A\sin B$$

$$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A\tan B}$$

$$\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A\tan B}$$

$\boxed{\frac{16}{65}}$

$\cos(A+B) = \left(\frac{-4}{5}\right)\left(\frac{5}{13}\right) - \left(\frac{-3}{5}\right)\left(\frac{12}{13}\right)$

$-20/65 + 36/65$

$$\sin(x+y) - \sin(x-y) = 2\cos x \sin y$$

$[(\sin x)(\cos y) + (\cos x)(\sin y)]$

$-[(\sin x)(\cos y) - (\cos x \sin y)]$

S/D

Here are some trigonometric sum and difference formulas.

$$\sin(A+B) = \sin A \cos B + \cos A \sin B$$

$$\sin(A-B) = \sin A \cos B - \cos A \sin B$$

$$\cos(A+B) = \cos A \cos B - \sin A \sin B$$

$$\cos(A-B) = \cos A \cos B + \sin A \sin B$$

$$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$\cancel{\sin x \cos y} + \cos x \sin y \cancel{- \sin x \cos y} + \cos x \sin y$

$\boxed{2\cos x \sin y}$

A

Here are some trigonometric sum and difference formulas

$$\tan(\pi - x) = -\tan x$$

$A = \pi \quad B = x$

$$\frac{\tan(\pi) - \tan x}{1 - \tan(\pi)(\tan x)}$$ S / D

$$\frac{0 - \tan x}{1 - 0(\tan x} = \boxed{-\tan x}$$ A

$$\sin(A+B) = \sin A \cos B + \cos A \sin B$$

$$\sin(A-B) = \sin A \cos B - \cos A \sin B$$

$$\cos(A+B) = \cos A \cos B - \sin A \sin B$$

$$\cos(A-B) = \cos A \cos B + \sin A \sin B$$

$$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$$\sin\left(\frac{\pi}{6}+x\right)+\sin\left(\frac{\pi}{6}-x\right)=\cos x$$

$$\sin\left(\frac{\pi}{6}\right)(\cos x)+\cancel{\cos\left(\frac{\pi}{6}\right)(\sin x)}\ +$$

$$\sin\left(\frac{\pi}{6}\right)(\cos x)-\cancel{\cos\left(\frac{\pi}{6}\right)(\sin(x))}$$

$$2\sin\frac{\pi}{6}\cos x$$

$$2\left(\frac{1}{2}\right)\cos x$$

$$\cos x$$

$$\frac{1}{2}\cos x+\cancel{\frac{\sqrt{3}}{2}\sin x}+\frac{1}{2}\cos x\ \cancel{-\frac{\sqrt{3}}{2}\sin x}$$

$$\cos x$$