Nama : _____
Kelas : _____

LKPD Identitas Trigonometri

Ayo Mengumpulkan Informasi

1. Rumus – rumus yang perlu dipahami:
   a. Rumus Dasar yang merupakan Kebalikan

$$* \csc\alpha = \frac{1}{\sin\alpha}$$
$$* \sec\alpha = \frac{1}{\cos\alpha}$$
$$* \cot\alpha = \frac{1}{\tan\alpha}$$

   b. Rumus Dasar yang merupakan hubungan perbandingan

$$* \tan\alpha = \frac{\sin\alpha}{\cos\alpha}$$
$$* \cot\alpha = \frac{\cos\alpha}{\sin\alpha}$$

   c. rema phytagoras

$$\otimes \cos^2\alpha + \sin^2\alpha = 1$$
$$\otimes 1 + \tan^2\alpha = \sec^2\alpha$$
$$\otimes 1 + \cot^2\alpha = \csc^2\alpha$$

Contoh:
Buktikan identitas berikut:

a. $\sin\alpha \cdot \cos\alpha \cdot \tan\alpha = (1 - \cos\alpha)(1 + \cos\alpha)$

Jawab:

Ruas kiri: $\sin\alpha \cdot \cos\alpha \cdot \tan\alpha$

$= \sin\alpha \cdot \cos\alpha \cdot \frac{\sin\alpha}{\cos\alpha}$

$= \sin^2\alpha$

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

By Pungky Rahmawati, S.Pd

b. $\sin\beta \cdot \tan\beta + \cos\beta = \sec\beta$

Jawab:

Ruas Kiri: $\sin\beta \cdot \tan\beta + \cos\beta$

$$= \sin\beta \cdot \frac{\sin\beta}{\cos\beta} + \cos\beta$$

$$= \frac{\sin^2\beta}{\cos\beta} + \frac{\cos^2\beta}{\cos\beta}$$

$$= \frac{\sin^2\beta + \cos^2\beta}{\cos\beta}$$

$$= \frac{1}{\cos\beta} = \sec\beta \text{ (Terbukti)}$$

Latihan Soal:

Sederhanakan bentuk berikut:

1.	$(1-\sin^2 x)(1+\tan^2 x)$	$\cos^2 x.\sec^2 x$
	=	$\cos^2 x.\frac{\sin^2 x}{\cos^2 x}$
	=	$1-\cos^2 x$
	=	$\cos^2 x.\frac{1}{\cos^2 x}$
2	$(1-\sin^2 x)\tan^2 x$	$\sin^2 x$
	=	1
	=	$\frac{\sin x}{\cos x} + \frac{\cos x}{1+\sin x}$
	=	$\frac{\frac{\cos x+1}{\cos x}}{\frac{\sin x+\sin x.\cos x}{\cos x}}$
3	$\frac{1+\sec x}{\tan x+\sin x}$	$\frac{\sin x(1+\sin x)+\cos^2 x}{\cos x(1+\sin x)}$
	=	$\frac{1}{\cos x}$
	=	$\csc x$
	=	$\frac{1+\frac{1}{\cos x}}{\frac{\sin x}{\cos x}+\sin x}$

By Pungky Rahmawati, S.Pd

	=	$\dfrac{\dfrac{\cos x+1}{\cos x}}{\dfrac{\sin x(1+\cos x)}{\cos x}}$
	=	$\dfrac{\sin x+\sin^2 x+\cos^2 x}{\cos x(1+\sin x)}$
4	$\tan x+\dfrac{\cos x}{1+\sin x}$	$\sec x$
	=	$\dfrac{1}{\sin x}$
	=	$\dfrac{\sin x+1}{\cos x(1+\sin x)}$
	=	
	=	
	=	

By Pungky Rahmawati, S.Pd