

The Secret of Proving Trigonometric Identities You Don't Want to Miss(Pre Calculus Honors 7 1

Lesson 236 | Precalculus | Fundamental trigonometric identities

<https://www.youtube.com/watch?v=mOt9bJ3ayag>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Simplify $14(1 - \cos^2 \theta) + 70\sin^2 \theta$ and name the identity.

02

Prove that $77(\sec^2 \theta - 1)/\tan \theta = 77\tan \theta$. State where the original expression is defined.

03

Prove that $12(\sec^2 \theta - 1)/\tan \theta = 12\tan \theta$. State where the original expression is defined.

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04

Simplify $3(1 - \cos^2 \theta) + 33\sin^2 \theta$ and name the identity.

05

Prove that $35(\sec^2 \theta - 1)/\tan \theta = 35\tan \theta$. State where the original expression is defined.

06

Prove that $48(\sec^2 \theta - 1)/\tan \theta = 48\tan \theta$. State where the original expression is defined.

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01

Simplify $14(1-\cos^2 \theta)+70\sin^2 \theta$ and name the identity.

Use $1-\cos^2 \theta=\sin^2 \theta$. Result $(14+70)\sin^2 \theta=84\sin^2 \theta$; valid for every real θ .

02

Prove that $77(\sec^2 \theta - 1)/\tan \theta = 77\tan \theta$. State where the original expression is defined.

$\sec^2 \theta - 1 = \tan^2 \theta$. For $\tan \theta \neq 0$, $77\tan^2 \theta / \tan \theta = 77\tan \theta$. Require $\cos \theta \neq 0$ and $\sin \theta \neq 0$; excluded angles remain excluded.

03

Prove that $12(\sec^2 \theta - 1)/\tan \theta = 12\tan \theta$. State where the original expression is defined.

$\sec^2 \theta - 1 = \tan^2 \theta$. For $\tan \theta \neq 0$, $12\tan^2 \theta / \tan \theta = 12\tan \theta$. Require $\cos \theta \neq 0$ and $\sin \theta \neq 0$; excluded angles remain excluded.

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04

Simplify $3(1-\cos^2 \theta)+33\sin^2 \theta$ and name the identity.

Use $1-\cos^2 \theta=\sin^2 \theta$. Result $(3+33)\sin^2 \theta=36\sin^2 \theta$; valid for every real θ .

05

Prove that $35(\sec^2 \theta - 1)/\tan \theta = 35\tan \theta$. State where the original expression is defined.

$\sec^2 \theta - 1 = \tan^2 \theta$. For $\tan \theta \neq 0$, $35\tan^2 \theta / \tan \theta = 35\tan \theta$. Require $\cos \theta \neq 0$ and $\sin \theta \neq 0$; excluded angles remain excluded.

06

Prove that $48(\sec^2 \theta - 1)/\tan \theta = 48\tan \theta$. State where the original expression is defined.

$\sec^2 \theta - 1 = \tan^2 \theta$. For $\tan \theta \neq 0$, $48\tan^2 \theta / \tan \theta = 48\tan \theta$. Require $\cos \theta \neq 0$ and $\sin \theta \neq 0$; excluded angles remain excluded.