Proving Trigonometric Identities

CUT & PASTE

FREEBIE !

Proving Trig Identities

1. $\sec x - \tan x = \dfrac{\cos x}{1 + \sin x}$

$\dfrac{1}{\cos x} - \dfrac{\sin x}{\cos x}$

$\dfrac{1 - \sin x}{\cos x} \cdot \dfrac{\cos x}{\cos x}$

$\dfrac{(1 - \sin x)(\cos x)}{\cos^2 x}$

$\dfrac{(1 - \sin x)(\cos x)}{1 - \sin^2 x}$

$\dfrac{(1 - \sin x)(\cos x)}{(1 + \sin x)(1 - \sin x)}$

$\dfrac{\cos x}{1 + \sin x}$

Proving Trig Identities

2. $\dfrac{1 + \sin \theta}{\cos \theta} + \dfrac{\cos \theta}{1 + \sin \theta} = 2 \sec \theta$

$\dfrac{(1 + \sin \theta)^2 + \cos^2 \theta}{\cos \theta (1 + \sin \theta)}$

$\dfrac{1 + 2 \sin \theta + \sin^2 \theta + \cos^2 \theta}{\cos x (1 + \sin \theta)}$

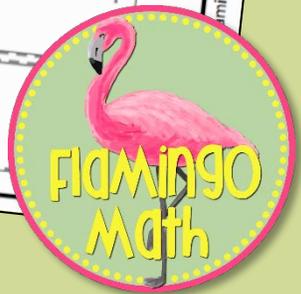$\dfrac{1 + 2 \sin \theta + 1}{\cos \theta (1 + \sin \theta)}$

$\dfrac{2(1 + \sin \theta)}{\cos \theta (1 + \sin \theta)}$

$\dfrac{2}{\cos \theta}$

$2 \sec \theta$

Flamingo Math

FLAMINGO MATH

PROVING TRIG IDENTITIES FREEBIE

This is a Free Cut & Paste activity for students enrolled in **PreCalculus or Trigonometry**. The lesson includes 2 trigonometric identities. Students are provided with the scrambled steps on a separate page to cut and paste the pieces in the correct progression to verify the identity.

This product is a sample of my PROVING TRIG IDENTITIES product.
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Proving Trig Identities

1. $\sec x - \tan x = \dfrac{\cos x}{1 + \sin x}$

2. $\dfrac{1 + \sin \theta}{\cos \theta} + \dfrac{\cos \theta}{1 + \sin \theta} = 2 \sec \theta$

Directions: Cut out each piece and paste them to the identity in the correct sequence.

Proof #1

$$\frac{(1-\sin x)(\cos x)}{(1+\sin x)(1-\sin x)}$$

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

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

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

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

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

Proof #2

$$\frac{1+2\sin\theta+1}{\cos\theta(1+\sin\theta)}$$

$$\frac{1+2\sin\theta+\sin^2\theta+\cos^2\theta}{\cos x(1+\sin\theta)}$$

$$\frac{2}{\cos\theta}$$

$$2\sec\theta$$

$$\frac{(1+\sin\theta)^2+\cos^2\theta}{\cos\theta(1+\sin\theta)}$$

$$\frac{2(1+\sin\theta)}{\cos\theta(1+\sin\theta)}$$

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

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

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

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

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

$$\frac{(1 - \sin x)(\cos x)}{(1 + \sin x)(1 - \sin x)}$$

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

2. $$\frac{1 + \sin \theta}{\cos \theta} + \frac{\cos \theta}{1 + \sin \theta} = 2 \sec \theta$$

$$\frac{(1 + \sin \theta)^2 + \cos^2 \theta}{\cos \theta (1 + \sin \theta)}$$

$$\frac{1 + 2\sin \theta + \sin^2 \theta + \cos^2 \theta}{\cos \theta (1 + \sin \theta)}$$

$$\frac{1 + 2\sin \theta + 1}{\cos \theta (1 + \sin \theta)}$$

$$\frac{2(1 + \sin \theta)}{\cos \theta (1 + \sin \theta)}$$

$$\frac{2}{\cos \theta}$$

$$2 \sec \theta$$

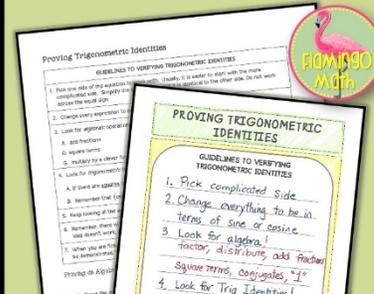# YOU MIGHT LIKE THESE OTHER ANALYTIC TRIGONOMETRY PRODUCTS:

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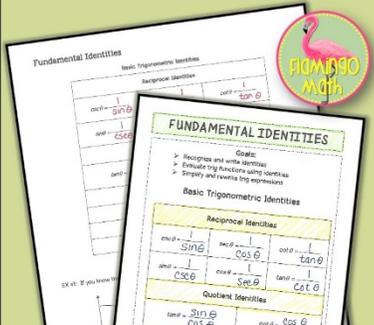
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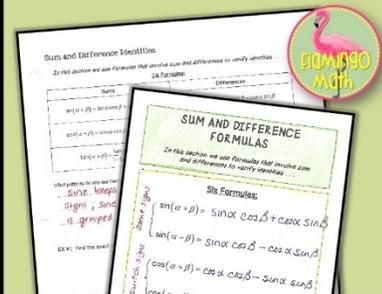
Trigonometric Identities

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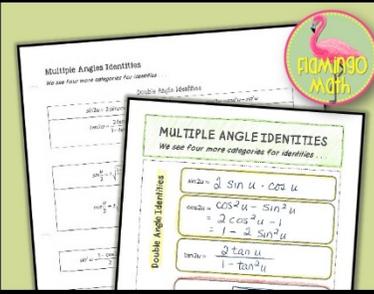**Proving Trigonometric Identities**

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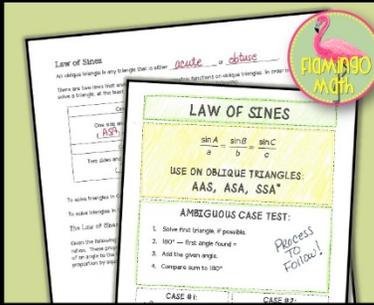
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Multiple Angle Identities

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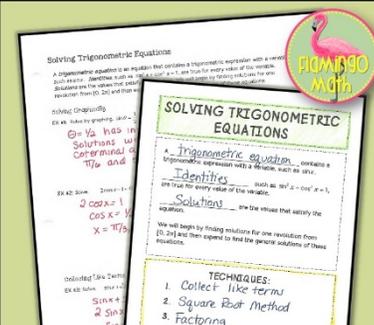SMART Board® • Homework • Daily Quiz

Law of Sines

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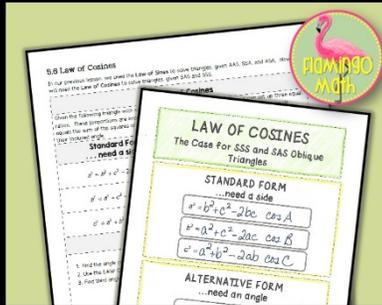
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Law of Cosines

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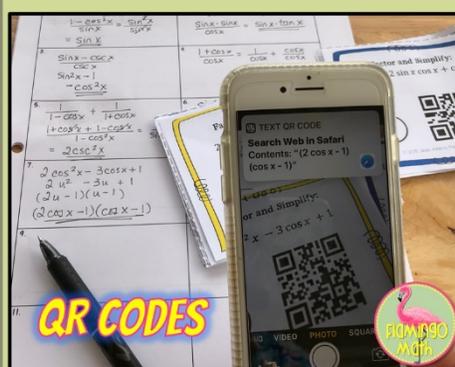Guided Notes and Foldables©
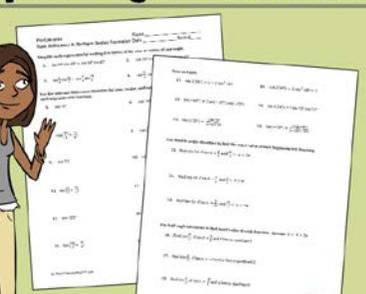SMART Board® • Homework • Daily Quiz

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