Class Discussion

Unit 4 Topic 3 Part 2 Right Triangle Trigonometry

Identities that are helpful

1. Reciprocal identities

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

2. Quotient Identities

$\tan\theta = \frac{\sin\theta}{\cos\theta}$, $\cot\theta = \frac{\cos\theta}{\sin\theta}$

3. Pythagorean Identities

$\sin^2\theta + \cos^2\theta = 1$

$1 + \tan^2\theta = \sec^2\theta$

$1 + \cot^2\theta = \csc^2\theta$

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

Ex 2 Verify $\frac{\cot x - 1}{\cot x + 1} = \frac{1 - \tan x}{1 + \tan x}$

Ex 3 Verify $1 - 2\cos^2 x = \frac{\tan^2 x - 1}{\tan^2 x + 1}$