Class Discussion

Unit 5 Topic 1 Part 1 Basic Trigonometric Identities

Review Identities

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

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

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

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

Ex1 Factor the following expressions completely

(a) $\sec^2 x - 2\tan x$

(b) $4\cos x - 3\sin^2 x - 1$

(c) $2\sec^3 x + 7\sec^2 x + 2\sec x - 3$

Ex 2 If $3\sin x + 3 = 2\cos^2 x$ and $\cos x < 0$, evaluate $\cos^2 x - \sin^2 x$