

Handout for LessonPlan 17

Identities So Far

$\tan(\theta) = \frac{\sin(\theta)}{\cos(\theta)}$	$\cot(\theta) = \frac{\cos(\theta)}{\sin(\theta)}$	$\sec(\theta) = \frac{1}{\cos(\theta)}$	$\csc(\theta) = \frac{1}{\sin(\theta)}$
$\sin(-\theta) = -\sin(\theta)$	$\cos(-\theta) = \cos(\theta)$	$\tan(-\theta) = -\tan(\theta)$	
$\csc(-\theta) = -\csc(\theta)$	$\sec(-\theta) = \sec(\theta)$	$\text{ctn}(-\theta) = -\text{ctn}(\theta)$	
$\sin(\theta) = \cos(90^\circ - \theta)$	$\cos(\theta) = \sin(90^\circ - \theta)$		
$\csc(\theta) = \sec(90^\circ - \theta)$	$\sec(\theta) = \csc(90^\circ - \theta)$		
$\tan(\theta) = \text{ctn}(90^\circ - \theta)$	$\text{ctn}(\theta) = \tan(90^\circ - \theta)$		
$\sin^2 \theta + \cos^2 \theta = 1$	$\sin^2 \theta = 1 - \cos^2 \theta$	$\cos^2 \theta = 1 - \sin^2 \theta$	
$\sin \theta = \pm \sqrt{1 - \cos^2 \theta}$	$\cos \theta = \pm \sqrt{1 - \sin^2 \theta}$	$\tan^2 \theta + 1 = \sec^2 \theta$	$\text{ctn}^2 \theta + 1 = \csc^2 \theta$

Simplify:

1) $\sec^2(\theta) [1 - \sin^2(\theta)]$

2) $\frac{\sec^2(\theta) - 1}{\sin^2(\theta)}$

$$3) [\sec(\theta) + 1][\sec(\theta) - 1]$$

Solve the equations:

$$4) \frac{\cos(\theta)}{1 - \sin^2(\theta)} + 2 = -1$$

$$5) 1 - \sin^2(\theta) \cot^2(\theta) = 0.8$$