

Assignment # 1

Name : _____

Block : _____

Pre-Calculus 12 Chapter 6 In Class Assignment

1. Prove the identity

a) $\sin^3 x + \sin x \cos^2 x = \sin x$

b) $\frac{\sec x}{\cot x + \tan x} = \sin x$

c) $\frac{\cot x}{\sec x} = \frac{1 - \sin^2 x}{\sin x}$

d) $\frac{\cot x}{\csc x - 1} = \frac{\csc x + 1}{\cot x}$

$$\text{e) } \frac{\sin 2x}{2-2\cos^2 x} = \cot x$$

$$\text{f) } \frac{\sin 2x}{\cos x} + \frac{\cos 2x}{\sin x} = \csc x$$

2. Prove the following

$$\text{a) } \sin\left(\frac{\pi}{4} + \theta\right) - \sin\left(\frac{\pi}{4} - \theta\right) = \sqrt{2} \sin \theta$$

$$\text{b) } \sin\left(\frac{\pi}{6} + \theta\right) + \cos\left(\frac{\pi}{3} + \theta\right) = \cos \theta$$

3. Determine an exact value for $\tan 345^\circ$

4. Given that $\cos A = \frac{-3}{5}$ and $\sin B = \frac{-2}{3}$ where A and B are both in quadrant III, use identities to evaluate:

a) $\cos(A + B)$

b) $\sin(A - \pi)$

