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

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

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

2. Prove the following

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

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

3. Determine an exact value for $\tan 345°$

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) $\sin(A - \pi)$