Accelerated Pre-Calculus – Unit 4 Mid-Year Exam Review

Name: _____ Period: _____

Show and label all work.

1.) Simplify $\csc x - \tan x \cos x$

2.) $\cot x \sin x = \cos x$
   a. What basic trigonometric identity would you use to verify the above statement?

   b. Verify the above.

3.) $\csc\left(\frac{\pi}{2} - \theta\right) = \sec\theta$
   a. Which sum or difference identity can be used to verify the above identity?

   b. Verify the identity.

4.) Verify:
   a. $\cot x - \csc x = \dfrac{\cos x - 1}{\sin x}$

   b. $\sin(\pi + x) = -\sin x$

5.) Solve:

a. $4 - 6\sin x = 4 - \sin x \quad for \quad 0 \le x \le \pi$

b. $\tan x + 1 = \sec x \quad for \quad [0,2\pi)$

c. $\tan^2 x + 5 = 4\sec x$ on the interval $[0, 2\pi)$

d. $2\cos x \sin x - \cos x = 0 \quad for \ 0 \le x \le 2\pi$

e. $16 - 16\cos^2 x = 4$ on the interval $[0,2\pi]$