Name: _____ Date: _____ IB Math A&A SL

Lesson 6.5 – Practice with Proving Trigonometric Identities

I. Verify Each Identity (Work with each other)

1. $\sin^3 x \cos^4 x = (\cos^4 x - \cos^6 x) \sin x$

2. $\sec^2 y - \cot^2\left(\frac{\pi}{2} - y\right) = 1$

3. $(\sin^4 \beta - 2\sin^2 \beta + 1)\cos \beta = \cos^5 \beta$

4. $\frac{1+\sin\theta}{\cos\theta} + \frac{\cos\theta}{1+\sin\theta} = 2\sec\theta$

5. $\frac{\cos x - \cos y}{\sin x + \sin y} + \frac{\sin x - \sin y}{\cos x + \cos y} = 0$

6. $\cos x - \frac{\cos x}{1 - \tan x} = \frac{\sin x \cos x}{\sin x - \cos x}$

7. $\sqrt{\frac{1-\cos\theta}{1+\cos\theta}} = \frac{1-\cos\theta}{|\sin\theta|}$

8. $\sin^4 x + \cos^4 x = 1 - 2\cos^2 x + 2\cos^4 x$