11U – Trigonometric Identities Mini-Assignment Name _____

Please hand in solutions to the following Trig Identities

Prove each Identity

1. $\frac{1}{\cos^2(x)} + \frac{1}{\sin^2(x)} = \csc^2(x) \cdot \sec^2(x)$

2. $\sin(x) \cdot \tan(x) = \frac{1-\cos^2(x)}{\cos(x)}$

3. $\left(1 + \tan^2(x)\right)\left(1 - \cos^2(x)\right) = \tan^2(x)$

4. $\tan(\alpha) + \frac{1}{\tan(\alpha)} = \csc(\alpha) \cdot \sec(\alpha)$

5. $\cos^4(\phi) - \sin^4(\phi) = 1 - 2\sin^2(\phi)$

6. $\frac{\tan(\theta)+\cos(\theta)}{\sin(\theta)} = \sec(\theta) + \cot(\theta)$