

§2.2: Verifying Trigonometric Identities

1.] Verify the identity: $\frac{\sec^2(\theta) - 1}{\sec^2(\theta)} = \sin^2(\theta)$

2.] Verify the identity: $2 \csc^2(\beta) = \frac{1}{1 - \cos(\beta)} + \frac{1}{1 + \cos(\beta)}$

3.] Verify the identity: $(\tan^2(x) + 1)(\cos^2(x) - 1) = -\tan^2(x)$

4.] Verify the identity: $\tan(x) + \cot(x) = \sec(x) \csc(x)$

5.] Verify the identity: $\sec(x) + \tan(x) = \frac{\cos(x)}{1 - \sin(x)}$

6.] Verify the identity: $\tan^4(x) = \tan^2(x) \sec^2(x) - \tan^2(x)$