

14.3 HW ANS: Pg. 1011 #8-11, 26-31, 36, 37

$$8. \frac{\sec \theta \cot \theta}{\sec \theta \cot \theta} = \frac{\cos \theta}{\cos \theta} = 1$$

$$\frac{\sec \theta \cot \theta}{\sec \theta \cot \theta} = \frac{1 \cdot \cos \theta}{\cos \theta \sin \theta} = \frac{1}{\sin \theta} = \csc \theta.$$

$$9. \frac{\sin \theta - \cos \theta}{\sin \theta} = 1 - \cot \theta$$

$$\frac{\sin \theta - \cos \theta}{\sin \theta} = \frac{\sin \theta}{\sin \theta} - \frac{\cos \theta}{\sin \theta} = 1 - \cot \theta.$$

$$10. \frac{\tan \theta \sin \theta}{\tan \theta \sin \theta} = \frac{\sec \theta - \cos \theta}{\sec \theta - \cos \theta}$$

$$\frac{\tan \theta \sin \theta}{\tan \theta \sin \theta} = \frac{\sin \theta \cdot \sin \theta}{\cos \theta} = \frac{\sin^2 \theta}{\cos \theta} = \frac{1 - \cos^2 \theta}{\cos \theta} = \frac{1}{\cos \theta} - \frac{\cos^2 \theta}{\cos \theta}$$

$$= \sec \theta - \cos \theta.$$

$$11. \frac{\sec^2 \theta (1 - \cos^2 \theta)}{\sec^2 \theta (1 - \cos^2 \theta)} = \frac{\tan^2 \theta}{\tan^2 \theta} = 1$$

$$\frac{\sec^2 \theta (1 - \cos^2 \theta)}{\sec^2 \theta (1 - \cos^2 \theta)} = \frac{\sec^2 \theta (\sin^2 \theta)}{\cos^2 \theta} = \frac{\sin^2 \theta}{\cos^2 \theta} = \tan^2 \theta$$

$$26. \frac{\sin^2 \theta}{1 - \cos^2 \theta} = 1$$

$$27. \frac{\tan \theta}{\sin \theta \sec \theta} = 1$$

$$28. \frac{\cos \theta}{\sin \theta \cot \theta} = 1$$

$$29. \frac{\tan \theta (\tan \theta + \cot \theta)}{\tan \theta (\tan \theta + \cot \theta)} = \frac{\sec^2 \theta}{\sec^2 \theta} = 1$$

$$30. \frac{\sin^2 \theta + \cos^2 \theta + \cot^2 \theta}{\sin^2 \theta + \cos^2 \theta + \cot^2 \theta} = \frac{\csc^2 \theta}{\csc^2 \theta} = 1$$

$$31. \frac{\sin^2 \theta \sec \theta \csc \theta}{\sin^2 \theta \sec \theta \csc \theta} = \frac{\tan \theta}{\tan \theta} = 1$$

$$36. \frac{1 - \cos^2 \theta}{\tan \theta} = \frac{\sin \theta \cos \theta}{\tan \theta}$$

$$\frac{1 - \cos^2 \theta}{\tan \theta} = \sin^2 \theta \cdot \cot \theta = \frac{\sin^2 \theta \cdot \cos \theta}{\sin \theta} = \sin \theta \cos \theta \checkmark$$

$$37. \frac{\csc^2 \theta}{1 + \tan^2 \theta} = \cot^2 \theta$$

$$\frac{\csc^2 \theta}{1 + \tan^2 \theta} = \frac{\csc^2 \theta}{\sec^2 \theta} = \frac{\cos^2 \theta}{\sin^2 \theta} = \cot^2 \theta$$