

Key

$$\begin{aligned} 1) \cos \theta \tan \theta &= \sin \theta \\ \cos \theta \cdot \frac{\sin \theta}{\cos \theta} &= \sin \theta \\ \sin \theta &= \sin \theta \checkmark \end{aligned}$$

$$\begin{aligned} 2) \sin \theta \cdot \frac{\cos \theta}{\sin \theta} &= \cos \theta \\ \cos \theta &= \cos \theta \checkmark \end{aligned}$$

$$\begin{aligned} 3) \frac{\sin \theta}{\cos \theta} \cdot \frac{1}{\sin \theta} \cdot \frac{\cos \theta}{1} &= 1 \\ 1 &= 1 \end{aligned}$$

$$\begin{aligned} 4) \sin \theta &= \frac{\tan \theta \cot \theta}{\csc \theta} \\ \sin \theta &= \frac{1}{\csc \theta} \checkmark \end{aligned}$$

$$5) \tan \theta = \frac{\cos \theta \sec \theta}{\cot \theta}$$

$$\tan \theta = \frac{1}{\cot \theta} \checkmark$$

$$6) \frac{\sec \theta}{\csc \theta} = \tan \theta$$

$$\frac{1}{\cos \theta} \div \frac{1}{\sin \theta} = \tan \theta$$

$$\frac{1}{\cos \theta} \cdot \frac{\sin \theta}{1} = \frac{\sin \theta}{\cos \theta} = \tan \theta \checkmark$$

$$\begin{aligned} 7) \frac{\sec^2 \theta - 1}{\sec^2 \theta} &= \sin^2 \theta \\ \frac{\tan^2 \theta}{\sec^2 \theta} &= \sin^2 \theta \end{aligned}$$

$$\frac{\sin^2 \theta}{\cos^2 \theta} \div \frac{1}{\cos^2 \theta}$$

$$\frac{\sin^2 \theta \cdot \cos^2 \theta}{\cos^2 \theta}$$

$$\sin^2 \theta = \sin^2 \theta$$

$$8) \cos \theta = \frac{\cot \theta}{\csc \theta}$$

$$\begin{aligned} \cos \theta &= \frac{\cos \theta}{\sin \theta} \div \frac{1}{\sin \theta} \\ &= \frac{\cos \theta \cdot \sin \theta}{\sin \theta} \\ \cos \theta &= \cos \theta \end{aligned}$$

$$\begin{aligned} 9) \sin \theta \sec \theta &= \tan \theta \\ \sin \theta \cdot \frac{1}{\cos \theta} &= \tan \theta \\ \frac{\sin \theta}{\cos \theta} &= \tan \theta \end{aligned}$$

$$10) \cot \theta \sec \theta \sin \theta = 1$$

$$\frac{\cos \theta}{\sin \theta} \cdot \frac{1}{\cos \theta} \cdot \frac{\sin \theta}{1} = 1$$

$$1 = 1$$

$$11) \cot \theta = \cos \theta \csc \theta$$

$$= \cos \theta \cdot \frac{1}{\sin \theta}$$

$$\cot \theta = \frac{\cos \theta}{\sin \theta} \quad \checkmark$$

$$12) \frac{1 + \tan^2 \theta}{\csc \theta \sec \theta} = \tan \theta$$

$$\frac{\sec^2 \theta}{\csc \theta \sec \theta} = \tan \theta$$

$$\frac{\sec \theta}{\csc \theta} = \tan \theta$$

$$\frac{1}{\cos \theta} \div \frac{1}{\sin \theta} = \tan \theta$$

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

$$\frac{\sin \theta}{\cos \theta} = \tan \theta$$

$$13) \csc \theta \tan \theta = \cos \theta$$

$$\frac{1}{\sin \theta} \cdot \frac{\sin \theta}{\cos \theta} = \cos \theta$$

$$\frac{1}{\cos \theta} \cdot \frac{\cos \theta}{1} = \cos \theta$$

$$\cos \theta = \cos \theta$$

$$14) \tan \theta \sin \theta + \cos \theta = \sec \theta$$

$$\frac{\sin \theta \cdot \sin \theta + \cos \theta}{\cos \theta} = \frac{1}{\cos \theta}$$

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

$$\frac{\sin^2 \theta + \cos^2 \theta}{\cos \theta} = \frac{1}{\cos \theta}$$

$$\frac{1}{\cos \theta} = \frac{1}{\cos \theta}$$

$$15) \tan \theta \csc \theta \cos \theta = 1$$

$$\frac{\cancel{\sin \theta} \cdot 1 \cdot \cancel{\cos \theta}}{\cancel{\cos \theta} \cancel{\sin \theta} \cdot 1} = 1$$

$$1 = 1$$

$$17) \frac{\sin \theta \cos \theta}{1} \cdot \frac{1}{\cos \theta} \cdot \frac{\cos \theta}{\sin \theta} = \cos \theta$$

$$\cos \theta = \cos \theta$$

$$19) \cos \theta \left(\frac{\cos \theta}{\sin \theta} \right) = \frac{1}{\sin \theta} - \frac{\sin \theta}{\sin \theta}$$

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

$$\frac{\cos^2 \theta}{\sin \theta} = \frac{\cos^2 \theta}{\sin \theta} \checkmark$$

$$21) \frac{1}{\sin \theta} - \frac{\cos \theta \cdot \cos \theta}{\sin \theta} = \sin \theta$$

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

$$\frac{\sin^2 \theta}{\sin \theta} = \sin \theta$$

$$\sin \theta = \sin \theta$$

$$16) \frac{\tan \theta}{\sec \theta} = \sin \theta$$

$$\frac{\sin \theta \div 1}{\cos \theta \cos \theta} = \sin \theta$$

$$\frac{\sin \theta \cdot \cancel{\cos \theta}}{\cancel{\cos \theta} \cdot 1} = \sin \theta$$

$$\sin \theta = \sin \theta$$

$$18) \frac{\sin \theta \cos \theta}{1} \cdot \frac{\sin \theta}{\cos \theta} + \cos^2 \theta = 1$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$20) \frac{\sin^2 \theta + \cos^2 \theta}{\tan^2 \theta + 1} = \cos^2 \theta$$

$$\frac{1}{\sec^2 \theta} = \cos^2 \theta$$

$$22) (\sec \theta - \tan \theta)(1 + \sin \theta) = \sec \theta + \sec \theta \sin \theta - \tan \theta - \tan \theta \sin \theta$$

$$\frac{1}{\cos \theta} + \frac{1 \cdot \sin \theta}{\cos \theta} - \frac{\sin \theta}{\cos \theta} - \frac{\sin \theta \cdot \sin \theta}{\cos \theta}$$

$$\frac{1}{\cos \theta} + \frac{\sin \theta}{\cos \theta} - \frac{\sin \theta}{\cos \theta} - \frac{\sin^2 \theta}{\cos \theta}$$

$$\frac{\cos^2 \theta}{\cos \theta} = \cos \theta$$

$$\cos \theta = \cos \theta$$

$$23) (1 + \cos\theta)(\csc\theta - \cot\theta) = \sin\theta$$

$$\csc\theta - \cot\theta + \cos\theta \csc\theta - \cot\theta \cos\theta = \sin\theta$$

$$\frac{1}{\sin\theta} - \frac{\cos\theta}{\sin\theta} + \cos\theta \left(\frac{1}{\sin\theta} \right) - \frac{\cos\theta \cos\theta}{\sin\theta} = \sin\theta$$

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

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

$$\frac{\sin^2\theta}{\sin\theta} = \sin\theta$$

$$\sin\theta = \sin\theta \quad \checkmark$$

$$24) \frac{1}{\cos\theta} \cdot \frac{1}{\sin\theta} = \frac{\sin\theta^{(\sin\theta)}}{\cos\theta^{(\sin\theta)}} + \frac{\cos\theta(\cos\theta)}{\sin\theta \cos\theta}$$

$$\frac{1}{\cos\theta \sin\theta} = \frac{\sin^2\theta + \cos^2\theta}{\cos\theta \sin\theta}$$

$$\frac{1}{\cos\theta \sin\theta} = \frac{1}{\cos\theta \sin\theta}$$

$$25) \sec^2\theta - 1 = \tan^2\theta$$

$$26) \frac{\sin\theta}{\csc\theta} + \frac{\cos\theta}{\sec\theta} = \csc^2\theta - \cot^2\theta$$

$$\sin\theta \div \frac{1}{\sin\theta} + \cos\theta \div \frac{1}{\cos\theta} = 1$$

$$\sin\theta \cdot \sin\theta + \cos\theta \cos\theta = 1$$

$$\sin^2\theta + \cos^2\theta = 1$$

$$27) \frac{\cos\theta \cdot \cos\theta}{\sin} + \frac{\sin\theta^{(\sin\theta)}}{\sin\theta} \csc\theta$$

$$\frac{\cos^2\theta}{\sin\theta} + \frac{\sin\theta}{\sin} \frac{1}{\cos\theta}$$

$$\frac{1}{\sin\theta} = \csc\theta$$