

1.  $\frac{-24}{25}$

2.  $\frac{25}{313}$

3.  $\frac{-840}{41}$

4.  $\frac{7\sqrt{2}}{10}$

5. 3

6.  $\frac{\sqrt{21}}{6}$

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

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

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

7.  $\cot \theta = \cot \theta$

$$\begin{aligned} \sin \theta \cos \theta + 2 \sin \theta \cos \theta \\ = 3 \sin \theta \cos \theta \end{aligned}$$

8.  $3 \sin \theta \cos \theta = 3 \sin \theta \cos \theta$

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

9.  $1 = 1$

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

$$\sin 2\theta = 2 \cos \theta \sin \theta$$

10.  $\boxed{\sin 2\theta = \sin 2\theta}$

$$\sin 2\theta - 2 \sin \theta = 2 \sin \theta \cos \theta - 2 \sin \theta$$

11.  $\boxed{\sin 2\theta - 2 \sin \theta = \sin 2\theta - 2 \sin \theta}$

$$\frac{2 \cos \theta}{2 \sin \theta \cos \theta} = \csc \theta$$

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

12.  $\boxed{\csc \theta = \csc \theta}$