

$$\begin{aligned}
 & (\sin(x) + \cos(x))^2 \\
 & (\sin\theta + \cos\theta)(\sin\theta + \cos\theta) \\
 & \sin^2\theta + 2\sin\theta\cos\theta + \cos^2\theta \\
 & \cancel{\sin^2\theta} + 2\sin\theta\cos\theta + \cancel{\cos^2\theta} \\
 & \boxed{2\sin\theta\cos\theta}
 \end{aligned}$$

$$\begin{aligned}
 & \textcircled{59} (2\csc\theta + 2)(2\csc\theta - 2) \\
 & 4\csc^2\theta - 4 \\
 & 4(\csc^2\theta - 1) \\
 & \boxed{4\cot^2\theta}
 \end{aligned}$$

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

$$\frac{1-\cos\theta + 1+\cos\theta}{(1-\cos\theta)(1+\cos\theta)}$$

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

$$\textcircled{63} \frac{\cos\theta}{1+\sin\theta} + \frac{1+\sin\theta}{\cos\theta}$$

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

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

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

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