

$$\begin{aligned}
 \textcircled{44} \quad \frac{\sec x}{\tan x} &= \frac{\frac{1}{\cos x}}{\frac{\sin x}{\cos x}} \\
 &= \frac{1}{\cos x} \div \frac{\sin x}{\cos x} \\
 &= \frac{1}{\cancel{\cos x}} \cdot \frac{\cancel{\cos x}}{\sin x} = \frac{1}{\sin x} \\
 &= \textcircled{\text{csc } x}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{47} \quad &(\sin x + \cos x)^2 + (\sin x - \cos x)^2 \\
 &(\sin x + \cos x)(\sin x + \cos x) \\
 &\sin^2 x + \sin x \cos x + \sin x \cos x + \cos^2 x \\
 &\sin^2 x + \cancel{2 \sin x \cos x} + \cos^2 x + \sin^2 x - \cancel{2 \sin x \cos x} + \cos^2 x \\
 &2 \sin^2 x + 2 \cos^2 x \\
 &2(\sin^2 x + \cos^2 x) \\
 &\textcircled{2}
 \end{aligned}$$