

p. 451) 9, 10, 12-14, 18, 20, 21

⑨  $\sin x$

⑩ 1

⑫  $\cos u$

⑬  $\tan^2 x$

⑭  $\sin \theta$

⑮ 1

⑯ 1

⑰ 1

$$\begin{aligned} \textcircled{13} \quad \frac{1 + \tan^2 x}{\csc^2 x} &= \frac{\sec^2 x}{\csc^2 x} = \frac{\frac{1}{\cos^2 x}}{\frac{1}{\sin^2 x}} = \frac{1}{\cos^2 x} \cdot \frac{\sin^2 x}{1} \\ &= \frac{1}{\cos^2 x} \cdot \frac{\sin^2 x}{1} \end{aligned}$$

$$\textcircled{21} \quad \sin^2(-x) + \cos^2(-x)$$

$$\sin(-x)\sin(-x) + \cos(-x)\cos(-x)$$

$$-\sin x \cdot -\sin x + \cos x \cdot \cos x$$

$$\sin^2 x + \cos^2 x = \textcircled{1}$$

$$= \frac{\sin^2 x}{\cos^2 x} = \textcircled{\tan^2 x}$$

$$\textcircled{14} \quad \frac{1 - \cos^2 \theta}{\sin \theta} = \frac{\sin^2 \theta}{\sin \theta} = \textcircled{\sin \theta}$$

$$\begin{aligned} \sin^2 x + \cos^2 x &= 1 \\ \frac{-\cos^2 x}{\sin^2 x} &= \frac{-\cos^2 x}{1 - \cos^2 x} \end{aligned}$$