

$$\begin{aligned}
 \sin 195^\circ &= \sin(240^\circ - 45^\circ) \\
 &= \sin 240^\circ \cos 45^\circ - \cos 240^\circ \sin 45^\circ \\
 &= \left(-\frac{\sqrt{3}}{2}\right) \left(\frac{\sqrt{2}}{2}\right) - \left(-\frac{1}{2}\right) \left(\frac{\sqrt{2}}{2}\right) \\
 &= \frac{-\sqrt{6}}{4} + \frac{\sqrt{2}}{4} \\
 &= \frac{-\sqrt{6} + \sqrt{2}}{4}
 \end{aligned}$$

$$\begin{aligned}
 \cos 285^\circ &= \cos(240^\circ + 45^\circ) \\
 &= \cos 240^\circ \cos 45^\circ - \sin 240^\circ \sin 45^\circ \\
 &= \left(-\frac{1}{2}\right) \left(\frac{\sqrt{2}}{2}\right) - \left(-\frac{\sqrt{3}}{2}\right) \left(\frac{\sqrt{2}}{2}\right) \\
 &= \frac{-\sqrt{2} + \sqrt{6}}{4}
 \end{aligned}$$

$$\begin{aligned}
 \tan 195 &= \tan(45+150) \\
 &= \frac{\tan 45 + \tan 150}{1 - \tan 45 \tan 150} \\
 &= \frac{\frac{1}{\cancel{3}} + (-\frac{\sqrt{3}}{3})}{\frac{1}{\cancel{3}} - (1)(-\frac{\sqrt{3}}{3})} = \frac{\frac{3-\sqrt{3}}{3}}{\frac{3+\sqrt{3}}{3}} = \frac{3-\sqrt{3}}{3+\sqrt{3}} \cdot \frac{\cancel{3}}{\cancel{3}} \\
 &= \frac{3-\sqrt{3}}{3+\sqrt{3}} \cdot \left(\frac{3-\sqrt{3}}{3-\sqrt{3}}\right) = \frac{9-3\sqrt{3}-3\sqrt{3}+3}{9-3} = \frac{12-6\sqrt{3}}{6} \\
 &= 2-\sqrt{3}
 \end{aligned}$$

$$\csc 195^\circ$$

$$\sin 195^\circ = \frac{-\sqrt{6}+\sqrt{2}}{4}$$

$$\begin{aligned}
 \csc 195^\circ &= \frac{4}{-\sqrt{6}+\sqrt{2}} \cdot \left(\frac{-\sqrt{6}-\sqrt{2}}{-\sqrt{6}-\sqrt{2}}\right) = \frac{-4\sqrt{6}-4\sqrt{2}}{6-2} \\
 &= \frac{-4\sqrt{6}-4\sqrt{2}}{4} \\
 &= -\sqrt{6}-\sqrt{2}
 \end{aligned}$$

$$\csc\left(\frac{3\pi}{2} + A\right) = -\sec A$$

$$\begin{aligned} & \frac{1}{\sin\left(\frac{3\pi}{2} + A\right)} = \\ & \frac{1}{\sin\frac{3\pi}{2}\cos A + \cos\frac{3\pi}{2}\sin A} = \\ & \frac{1}{-1\cos A + 0\sin A} = \\ & -\frac{1}{\cos A} = \checkmark \\ & -\sec A = -\sec A \end{aligned}$$

p. 442

14, 15, 17, 18, 19, 21, 23-24

35-37, 39, 42