$$\sin 195° = \sin(\overset{\alpha}{240°} - \overset{\beta}{45°})$$

$$= \sin 240° \cos 45° - \cos 240° \sin 45°$$

$$= \left(-\frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{2}}{2}\right) - \left(-\frac{1}{2}\right)\left(\frac{\sqrt{2}}{2}\right)$$

$$= \frac{-\sqrt{6}}{4} + \frac{\sqrt{2}}{4}$$

$$= \frac{-\sqrt{6} + \sqrt{2}}{4}$$

$$\cos 285° = \cos(240 + 45)$$

$$= \cos 240° \cos 45° - \sin 240° \sin 45°$$

$$= \left(-\frac{1}{2}\right)\left(\frac{\sqrt{2}}{2}\right) - \left(-\frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{2}}{2}\right)$$

$$= \frac{-\sqrt{2} + \sqrt{6}}{4}$$

$$\tan 195 = \tan(45 + 150)$$

$$= \frac{\tan 45 + \tan 150°}{1 - \tan 45 \tan 150°}$$

$$= \frac{\frac{3}{3} + \left(-\frac{\sqrt{3}}{3}\right)}{\frac{3}{3} - (1)\left(-\frac{\sqrt{3}}{3}\right)} = \frac{\frac{3-\sqrt{3}}{3}}{\frac{3+\sqrt{3}}{3}} = \frac{3-\sqrt{3}}{3} \cdot \frac{3}{3+\sqrt{3}}$$

$$= \frac{3-\sqrt{3}}{3+\sqrt{3}} \cdot \left(\frac{3-\sqrt{3}}{3-\sqrt{3}}\right) = \frac{9 - 3\sqrt{3} - 3\sqrt{3} + 3}{9 - 3} = \frac{12 - 6\sqrt{3}}{6}$$

$$= 2 - \sqrt{3}$$

$$\csc 195°$$

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

$$\csc 195° = \frac{4}{-\sqrt{6} + \sqrt{2}} \cdot \left(\frac{-\sqrt{6} - \sqrt{2}}{-\sqrt{6} - \sqrt{2}}\right) = \frac{-4\sqrt{6} - 4\sqrt{2}}{6 - 2}$$

$$= \frac{-4\sqrt{6} - 4\sqrt{2}}{4}$$

$$= -\sqrt{6} - \sqrt{2}$$

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

$$\frac{1}{\sin\left(\frac{3\pi}{2} + A\right)} =$$

$$\frac{1}{\sin\frac{3\pi}{2}\cos A + \cos\frac{3\pi}{2}\sin A} =$$

$$\frac{1}{-1\cos A + 0\sin A} =$$

$$-\frac{1}{\cos A} =$$

$$-\sec A = -\sec A$$

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