deg	rad
30^0	$\dfrac{\pi}{6}$
90^0	$\pi/2$
45^0	$\dfrac{\pi}{4}$
60^0	$\dfrac{\pi}{3}$

$$\sin\theta = \frac{O}{H} \qquad \sin 30 = \frac{1}{2} \qquad \sin 45 = \frac{1}{\sqrt{2}} \qquad \sin 60 = \frac{\sqrt{3}}{2}$$

$$\cos\theta = \frac{A}{H} \qquad \cos 30 = \frac{\sqrt{3}}{2} \qquad \cos 45 = \frac{1}{\sqrt{2}} \qquad \cos 60 = \frac{1}{2}$$

$$\tan\theta = \frac{O}{A} \qquad \tan 30 = \frac{1}{\sqrt{3}} \qquad \tan 45 = 1 \qquad \tan 60 = \sqrt{3}$$

$$\operatorname{cosec}\theta = \frac{H}{O} \qquad \operatorname{cosec} 30 = \frac{2}{1} = 2 \qquad \operatorname{cosec} 45 = \frac{\sqrt{2}}{1} = \sqrt{2} \qquad \operatorname{cosec} 60 = \frac{2}{\sqrt{3}}$$

$$\sec\theta = \frac{H}{A} \qquad \sec 30 = \frac{2}{\sqrt{3}} \qquad \sec 45 = \frac{\sqrt{2}}{1} = \sqrt{2} \qquad \sec 60 = \frac{2}{1} = 2$$

$$\cot\theta = \frac{A}{O} \qquad \cot 30 = \frac{\sqrt{3}}{1} = \sqrt{3} \qquad \cot 45 = 1 \qquad \cot 60 = \frac{1}{\sqrt{3}}$$

$$\sin 75 = \sin(45+30) = \sin 45\cos 30 + \cos 45\sin 30 = \frac{1}{\sqrt{2}}\times\frac{\sqrt{3}}{2} + \frac{1}{\sqrt{2}}\times\frac{1}{2} = \frac{\sqrt{3}}{2\sqrt{2}} + \frac{1}{2\sqrt{2}} = \frac{\sqrt{3}+1}{2\sqrt{2}}$$

$$\sin 105 = \sin(45+60) = \sin 45\cos 60 + \cos 45\sin 60 = \frac{1}{\sqrt{2}}\times\frac{1}{2} + \frac{1}{\sqrt{2}}\times\frac{\sqrt{3}}{2} = \frac{1}{2\sqrt{2}} + \frac{\sqrt{3}}{2\sqrt{2}} = \frac{1+\sqrt{3}}{2\sqrt{2}}$$

$$\sin 90 = \sin(30+60) = \sin 30\cos 60 + \cos 30\sin 60 = \frac{1}{2}\times\frac{1}{2} + \frac{\sqrt{3}}{2}\times\frac{\sqrt{3}}{2} = \frac{1}{4} + \frac{3}{4} = 1$$

$$\cos 75 = \cos(45+30) = \cos 45\cos 30 - \sin 45\sin 30 = \frac{1}{\sqrt{2}}\times\frac{\sqrt{3}}{2} - \frac{1}{\sqrt{2}}\times\frac{1}{2} = \frac{\sqrt{3}}{2\sqrt{2}} - \frac{1}{2\sqrt{2}} = \frac{\sqrt{3}-1}{2\sqrt{2}}$$

$$\cos 105 = \cos(45+60) = \cos 45\cos 60 - \sin 45\sin 60 = \frac{1}{\sqrt{2}}\times\frac{1}{2} - \frac{1}{\sqrt{2}}\times\frac{\sqrt{3}}{2} = \frac{1}{2\sqrt{2}} - \frac{\sqrt{3}}{2\sqrt{2}} = \frac{1-\sqrt{3}}{2\sqrt{2}}$$

$$\cos 90 = \cos(30+60) = \cos 30\cos 60 - \sin 30\sin 60 = \frac{\sqrt{3}}{2}\times\frac{1}{2} - \frac{1}{2}\times\frac{\sqrt{3}}{2} = \frac{\sqrt{3}}{4} - \frac{\sqrt{3}}{4} = 0$$

$$\tan 75 = \tan(45+30) = \frac{\tan 45 + \tan 30}{1 - \tan 45\tan 30} = \frac{1 + \dfrac{1}{\sqrt{3}}}{1 - \dfrac{1}{\sqrt{3}}}$$

$$\tan 105 = \tan(45+60) = \frac{\tan 45 + \tan 60}{1 - \tan 45\tan 60} = \frac{1+\sqrt{3}}{1-\sqrt{3}}$$

$$\tan 90 = \tan(30 + 60) = \frac{\tan 30 + \tan 60}{1 - \tan 30 \tan 60} = \frac{\sqrt{3} + \dfrac{1}{\sqrt{3}}}{1-1} = \frac{\sqrt{3} + \dfrac{1}{\sqrt{3}}}{0} = \text{unidentified}$$

$$\sin 15 = \sin(45 - 30) = \sin 45 \cos 30 - \cos 45 \sin 30 = \frac{1}{\sqrt{2}} \times \frac{\sqrt{3}}{2} - \frac{1}{\sqrt{2}} \times \frac{1}{2} = \frac{\sqrt{3}}{2\sqrt{2}} - \frac{1}{2\sqrt{2}} = \frac{\sqrt{3} - 1}{2\sqrt{2}}$$

$$\cos 15 = \cos(45 - 30) = \cos 45 \cos 30 + \sin 45 \sin 30 = \frac{1}{\sqrt{2}} \times \frac{\sqrt{3}}{2} + \frac{1}{\sqrt{2}} \times \frac{1}{2} = \frac{\sqrt{3}}{2\sqrt{2}} + \frac{1}{2\sqrt{2}} = \frac{\sqrt{3} + 1}{2\sqrt{2}}$$

$$\tan 15 = \tan(45 - 30) = \frac{\tan 45 - \tan 30}{1 + \tan 45 \tan 30} = \frac{1 - \dfrac{1}{\sqrt{3}}}{1 + \dfrac{1}{\sqrt{3}}}$$

$$\operatorname{cosec} 75 = \frac{2\sqrt{2}}{\sqrt{3} + 1} \qquad \sec 75 = \frac{2\sqrt{2}}{\sqrt{3} - 1} \qquad \cot 75 = \frac{1 + \dfrac{1}{\sqrt{3}}}{1 - \dfrac{1}{\sqrt{3}}}$$

$$\operatorname{cosec} 105 = \frac{2\sqrt{2}}{1 + \sqrt{3}} \qquad \sec 105 = \frac{2\sqrt{2}}{1 - \sqrt{3}} \qquad \cot 105 = \frac{1 - \sqrt{3}}{1 + \sqrt{3}}$$

$$\operatorname{cosec} 90 = 1 \qquad \sec 90 = 0 \qquad \cot 90 = \text{unidentified}$$

$$\operatorname{cosec} 15 = \frac{2\sqrt{2}}{\sqrt{3} - 1} \qquad \sec 15 = \frac{2\sqrt{2}}{1 + \sqrt{3}} \qquad \cot 15 = \frac{1 + \dfrac{1}{\sqrt{3}}}{1 - \dfrac{1}{\sqrt{3}}}$$