

VALUES OF THE SINE, COSINE AND TANGENT FOR THE SPECIAL ANGLES

$$\begin{array}{lll} \sin 30^\circ = \frac{1}{2} & \sin 45^\circ = \frac{1}{\sqrt{2}} & \sin 60^\circ = \frac{\sqrt{3}}{2} \\ \cos 30^\circ = \frac{\sqrt{3}}{2} & \cos 45^\circ = \frac{1}{\sqrt{2}} & \cos 60^\circ = \frac{1}{2} \\ \tan 30^\circ = \frac{1}{\sqrt{3}} & \tan 45^\circ = 1 & \tan 60^\circ = \sqrt{3} \end{array}$$

NOTE THAT $\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$ AND THAT $\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$.

BECAUSE THIS IS A CALCULUS COURSE, WE MEASURE ANGLES IN RADIANS. AMONG ANGLES THAT WE USE FREQUENTLY ARE:

$$30^\circ = \frac{\pi}{6} \text{ radians}$$

$$45^\circ = \frac{\pi}{4} \text{ radians and}$$

$$60^\circ = \frac{\pi}{3} \text{ radians .}$$

THUS, WE HAVE THE FOLLOWING:

$$\sin\left(\frac{\pi}{6}\right) = \frac{1}{2} \quad \sin\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}} \text{ and } \sin\left(\frac{\pi}{3}\right) = \frac{\sqrt{3}}{2}$$

$$\cos\left(\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2} \quad \cos\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}} \text{ and } \cos\left(\frac{\pi}{3}\right) = \frac{1}{2}$$

and

$$\tan\left(\frac{\pi}{6}\right) = \frac{1}{\sqrt{3}} \quad \tan\left(\frac{\pi}{4}\right) = 1 \text{ and } \tan\left(\frac{\pi}{3}\right) = \sqrt{3}.$$