

For an angle θ in standard position, with the terminal side intersecting the unit circle at the point (x, y) , the value of the tangent function is given by $\tan \theta = \frac{y}{x}$. Therefore:

$$\tan 30^\circ = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{2} \cdot \frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$