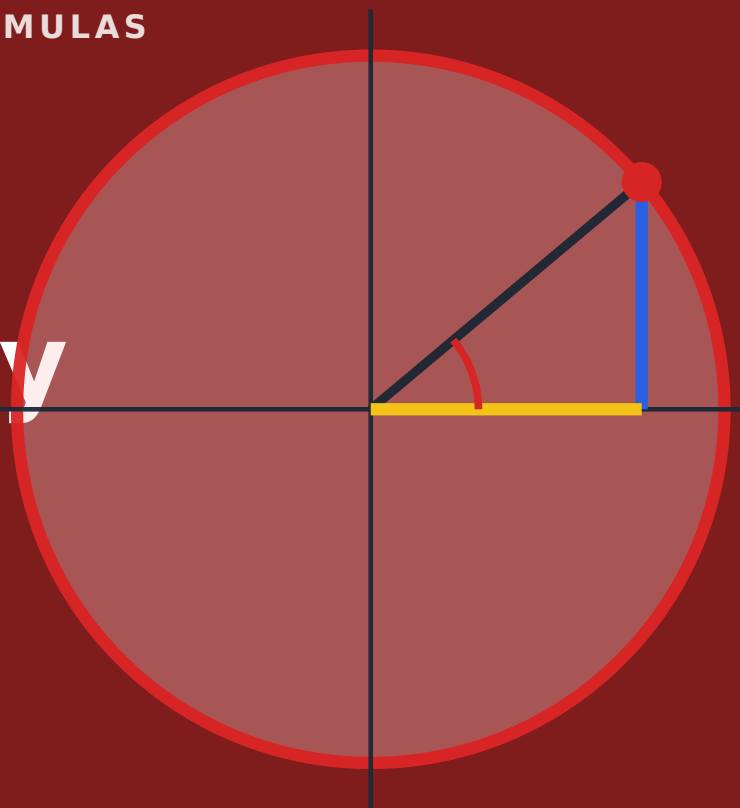


Introduction to Trigonometry

**Ratios (right $\triangle$)**

$$\sin A = \frac{P}{H}, \quad \cos A = \frac{B}{H}, \quad \tan A = \frac{P}{B} = \frac{\sin A}{\cos A}$$

Reciprocals

$$\operatorname{cosec} A = \frac{1}{\sin A}, \quad \sec A = \frac{1}{\cos A}, \quad \cot A = \frac{1}{\tan A}$$

Identities

$$\sin^2 A + \cos^2 A = 1, \quad 1 + \tan^2 A = \sec^2 A, \\ 1 + \cot^2 A = \operatorname{cosec}^2 A$$

 $0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ$

$$\sin : 0, \frac{1}{2}, \frac{1}{\sqrt{2}}, \frac{\sqrt{3}}{2}, 1; \quad \cos : 1, \frac{\sqrt{3}}{2}, \frac{1}{\sqrt{2}}, \frac{1}{2}, 0$$

 $\tan$ at the same angles

$$0, \frac{1}{\sqrt{3}}, 1, \sqrt{3}, \text{ not defined}$$