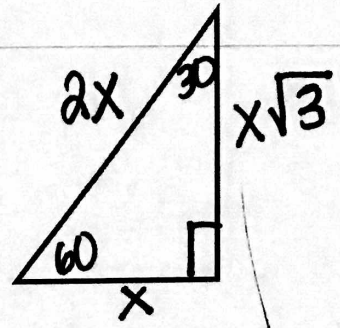
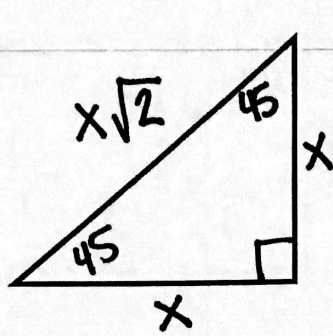
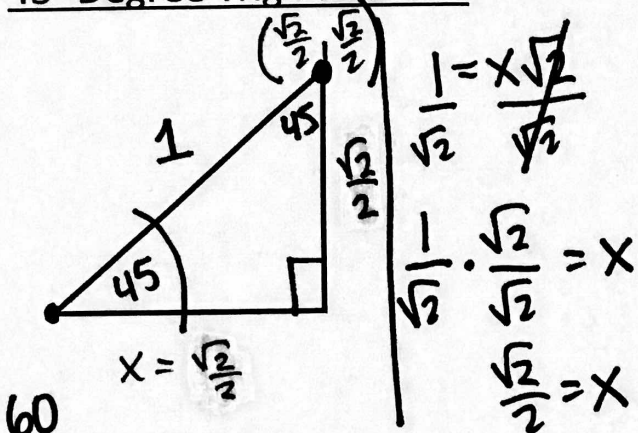


Special Right Triangles and Coordinates on Unit Circle

Special Right Triangles



45-Degree Trig Functions

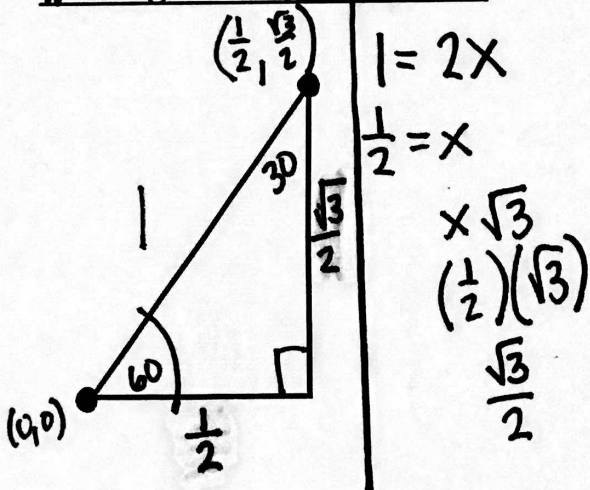


$$\sin 45^\circ = \frac{\sqrt{2}}{2} \leftarrow y\text{-value of point}$$

$$\cos 45^\circ = \frac{\sqrt{2}}{2} \leftarrow x\text{-value of point}$$

$$\tan 45^\circ = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1 \leftarrow \frac{y}{x} \text{ of point}$$

60-Degree Trig Functions

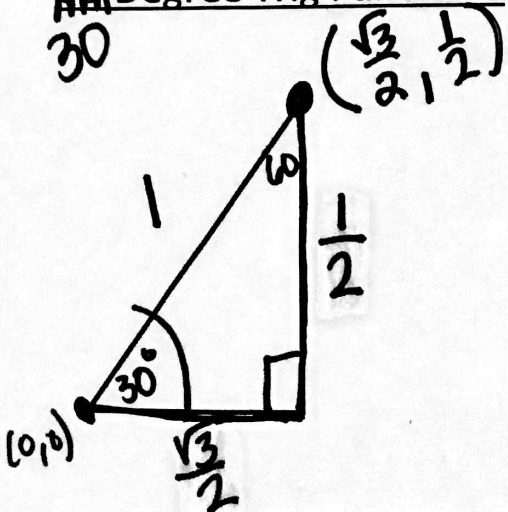


$$\sin 60^\circ = \frac{O}{H} = \frac{\frac{\sqrt{3}}{2}}{1} = \frac{\sqrt{3}}{2} (y)$$

$$\cos 60^\circ = \frac{A}{H} = \frac{\frac{1}{2}}{1} = \frac{1}{2} (x)$$

$$\tan 60^\circ = \frac{O}{A} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \sqrt{3} \left(\frac{y}{x}\right)$$

30-Degree Trig Functions



$$\sin 30^\circ = \frac{O}{H} = \frac{\frac{1}{2}}{1} = \frac{1}{2}$$

$$\cos 30^\circ = \frac{A}{H} = \frac{\frac{\sqrt{3}}{2}}{1} = \frac{\sqrt{3}}{2}$$

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