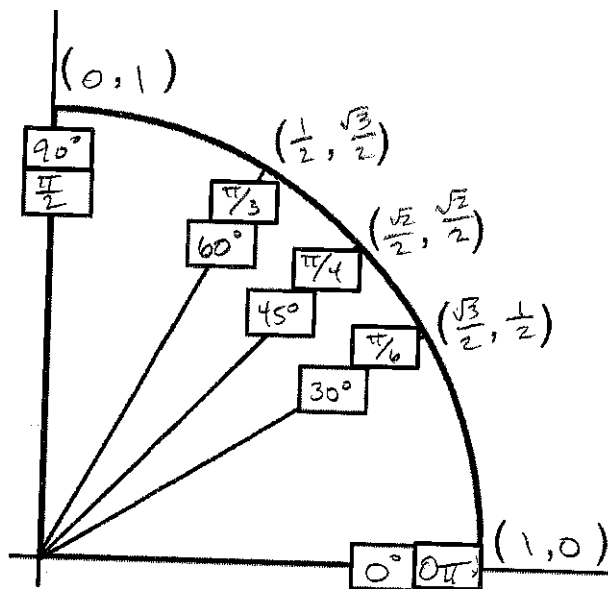


I. Complete quadrant I of the unit circle ...
... using **NO** notes, resources, or calculator!!

- label degrees
- label radians
- label ordered pairs

$$(x, y) \Rightarrow (\cos, \sin)$$

$$\tan = \frac{\sin}{\cos}$$



II. Find each exact trig value. No Calculator!!

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

2. $\cos 45^\circ = \frac{\sqrt{2}}{2}$

3. $\tan \frac{\pi}{3} = \sqrt{3}$

4. $\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$

$$\frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \sqrt{3}$$

5. $\sin 60^\circ = \frac{\sqrt{3}}{2}$

6. $\tan \frac{\pi}{6} = \frac{\sqrt{3}}{3}$

7. $\cot \frac{\pi}{4} = 1$

8. $\sec 30^\circ = \frac{2\sqrt{3}}{3}$

$$\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{2} \cdot \frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

$$\frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = \frac{\sqrt{2}}{2} \cdot \frac{2}{\sqrt{2}} = 1$$

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

9. $\tan \frac{\pi}{2}$ und.

10. $\sin 90^\circ = 1$

11. $\csc 60^\circ = \frac{2\sqrt{3}}{3}$

12. $\sec \frac{\pi}{4} = \sqrt{2}$

$$\frac{1}{0}$$

$$\frac{1}{\sin 60^\circ} = \frac{1}{\frac{\sqrt{3}}{2}} = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$$

$$\frac{1}{\cos \frac{\pi}{4}} = \frac{1}{\frac{\sqrt{2}}{2}} = \frac{2}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2}$$

III. Evaluate. No calculator!!

13. $\sin 30^\circ - \cos \frac{\pi}{3}$

$$\frac{1}{2} - \frac{1}{2} = 0$$

14. $\sin \frac{\pi}{4} \cos \frac{\pi}{4}$

$$\frac{\sqrt{2}}{2} \cdot \frac{\sqrt{2}}{2} = \frac{2}{4} = \frac{1}{2}$$

15. $\tan 45^\circ + \cos 0^\circ = 1 + 1 = 2$

$$\frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = \frac{\sqrt{2}}{2} \cdot \frac{2}{\sqrt{2}} = 1$$

$$\cos 0 = 1$$