

§4.2A: Unit Circle Applications

“I WILL...

...apply the six trig functions on the coordinate plane from a point.”

I. Reciprocal Identities Theorem

A. Functions

1. $\sin \theta = \underline{\hspace{2cm}}$

2. $\cos \theta = \underline{\hspace{2cm}}$

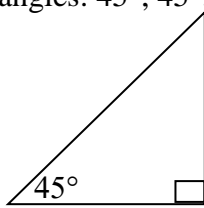
3. $\tan \theta = \underline{\hspace{2cm}}$

4. $\csc \theta = \underline{\hspace{2cm}}$

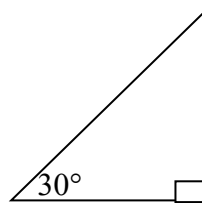
5. $\sec \theta = \underline{\hspace{2cm}}$

6. $\cot \theta = \underline{\hspace{2cm}}$

B. Right Triangles: $45^\circ, 45^\circ, 90^\circ$



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



II. Families

A. $\frac{\pi}{4}$ family: (_____, _____) Tan: (_____, _____)

B. $\frac{\pi}{6}$ family: (_____, _____) Tan: (_____, _____)

C. $\frac{\pi}{3}$ family: (_____, _____) Tan: (_____, _____)

Ex 1: Solve $\cos 45^\circ$ without a calculator

Ex 2: Solve $\tan \frac{3\pi}{4}$ without a calculator

Ex 3: Solve $\tan\left(\frac{11\pi}{6}\right)$ without a calculator	Your Turn: Solve $\tan\frac{\pi}{3}$ without a calculator
Ex 4: Solve $\tan\left(-\frac{\pi}{3}\right)$ without a calculator	Your Turn: Solve $\tan\frac{9\pi}{4}$ without a calculator
Ex 5: Solve $\sec\frac{7\pi}{4}$ without a calculator	Ex 6: Solve $\csc\frac{4\pi}{3}$ without a calculator
Ex 7: Solve $\cot\frac{11\pi}{6}$ without a calculator	Your Turn: Solve $\csc\left(-\frac{11\pi}{6}\right)$ without a calculator
Ex 8: Solve $\cot\frac{\pi}{2}$ without a calculator	Ex 9: Solve $\tan\frac{\pi}{2}$ without a calculator
Your Turn: Solve $\cot 4\pi$ without a calculator	