

Practice Worksheet #1    No Calc.    Unit Circle Only

$$\begin{aligned} \textcircled{1} \quad & \cos 25^\circ \cos 15^\circ - \sin 25^\circ \sin 15^\circ \\ & \cos(25^\circ + 15^\circ) \\ & \cos 40^\circ \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \sin 140^\circ \cos 50^\circ + \cos 140^\circ \sin 50^\circ \\ & \sin(140^\circ + 50^\circ) \\ & \sin 190^\circ \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & \frac{\tan 325^\circ - \tan 86^\circ}{1 + \tan 325^\circ \tan 86^\circ} \\ & \tan(325 - 86) \\ & \tan 239^\circ \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & \frac{\tan 140^\circ - \tan 60^\circ}{1 + \tan 140^\circ \tan 60^\circ} \\ & \tan(140 - 60^\circ) \\ & \tan 80^\circ \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & \sin 3 \cos 1.2 - \cos 3 \sin 1.2 \\ & \sin(3 - 1.2) \\ & \sin 1.8 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & \cos \frac{\pi}{7} \cos \frac{\pi}{5} - \sin \frac{\pi}{7} \sin \frac{\pi}{5} \\ & \cos\left(\frac{\pi}{7} + \frac{\pi}{5}\right) \\ & \cos \frac{12\pi}{35} = \cos \frac{5/35 - 7/35}{35} \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & \frac{\tan 2x + \tan x}{1 - \tan 2x \tan x} \\ & \tan(2x + x) \\ & \tan 3x \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & \cos 3x \cos 2y + \sin 3x \sin 2y \\ & \cos(3x - 2y) \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & \sin 330^\circ \cos 30^\circ - \cos 330^\circ \sin 30^\circ \\ & \sin(330 - 30) \\ & \sin 300^\circ = -\frac{\sqrt{3}}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & \cos 15^\circ \cos 60^\circ + \sin 15^\circ \sin 60^\circ \\ & \cos(15 - 60) \\ & \cos(45^\circ) = \frac{\sqrt{2}}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad & \sin \frac{\pi}{12} \cos \frac{\pi}{4} + \cos \frac{\pi}{12} \sin \frac{\pi}{4} \\ & \sin\left(\frac{\pi}{12} + \frac{\pi}{4}\right) \\ & \sin \frac{4\pi}{12} = \sin \frac{\pi}{3} = \frac{\sqrt{3}}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad & \cos \frac{\pi}{16} \cos \frac{3\pi}{16} - \sin \frac{\pi}{16} \sin \frac{3\pi}{16} \\ & \cos\left(\frac{\pi}{16} + \frac{3\pi}{16}\right) \\ & \cos \frac{4\pi}{16} = \cos \frac{\pi}{4} = \frac{\sqrt{2}}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad & \frac{\tan 25^\circ + \tan 110^\circ}{1 - \tan 25^\circ \tan 110^\circ} \\ & \tan(25 + 110) \\ & \tan 135^\circ = -1 \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad & \frac{\tan \frac{5\pi}{4} - \tan \frac{\pi}{12}}{1 + \tan \frac{5\pi}{4} \tan \frac{\pi}{12}} \\ & \tan\left(\frac{5\pi}{4} - \frac{\pi}{12}\right) \\ & \tan \frac{14\pi}{12} = \tan \frac{7\pi}{6} = \frac{\sqrt{3}}{3} \end{aligned}$$

