

Section 6.2 Extra Practice

- Write each expression as a single trigonometric function.
 - $\sin 28^\circ \cos 35^\circ + \cos 28^\circ \sin 35^\circ$
 - $\cos 10^\circ \cos 7^\circ - \sin 10^\circ \sin 7^\circ$
 - $\cos \frac{\pi}{12} \cos \frac{\pi}{4} + \sin \frac{\pi}{12} \sin \frac{\pi}{4}$
 - $\sin \frac{\pi}{3} \cos \frac{\pi}{4} - \cos \frac{\pi}{3} \sin \frac{\pi}{4}$
- Simplify and then give an exact value for each expression.
 - $\cos 25^\circ \cos 5^\circ - \sin 25^\circ \sin 5^\circ$
 - $\sin 40^\circ \cos 20^\circ + \cos 40^\circ \sin 20^\circ$
 - $\sin \frac{\pi}{3} \cos \frac{\pi}{6} + \cos \frac{\pi}{3} \sin \frac{\pi}{6}$
 - $\cos \frac{7\pi}{12} \cos \frac{\pi}{3} + \sin \frac{7\pi}{12} \sin \frac{\pi}{3}$
- Write each expression as a single trigonometric function.
 - $2 \sin \frac{\pi}{6} \cos \frac{\pi}{6}$
 - $\cos^2 \frac{\pi}{3} - \sin^2 \frac{\pi}{3}$
 - $1 - 2 \sin^2 15^\circ$
 - $\frac{2 \tan \frac{\pi}{6}}{1 - \tan^2 \frac{\pi}{6}}$
- Simplify each expression using a sum identity.
 - $\sin (90^\circ + A)$
 - $\cos (90^\circ + A)$
 - $\sin (\pi + A)$
 - $\cos (2\pi + A)$
- Simplify each expression using a difference identity.
 - $\sin (90^\circ - A)$
 - $\sin (270^\circ - A)$
 - $\sin \left(\frac{\pi}{2} - A \right)$
 - $\cos \left(\frac{3\pi}{2} - A \right)$
- Simplify each expression to a single primary trigonometric function.
 - $\frac{\sin 2\theta}{2 \sin \theta}$
 - $\cos 3x \cos x - \sin 3x \sin x$
 - $\frac{\cos 2\theta - 1}{2 \sin \theta}$
 - $\frac{\sin^3 x}{\cos 2x - \cos^2 x}$
- Determine the exact value of each trigonometric expression.
 - $\cos \frac{2\pi}{3}$
 - $\tan 15^\circ$
 - $\sin 105^\circ$
 - $\cos \frac{5\pi}{6}$
- Determine whether each equation is true.
 - $\cos 80^\circ = \cos 75^\circ \cos 5^\circ - \sin 75^\circ \sin 5^\circ$
 - $\cos (-24^\circ) = \cos 16^\circ - \cos 40^\circ$
 - $\tan 70^\circ = \frac{2 \tan 30^\circ}{1 - \tan^2 70^\circ}$
- If $\angle A$ and $\angle B$ are both in quadrant I, and $\sin A = \frac{3}{5}$ and $\cos B = \frac{5}{13}$, evaluate each of the following.
 - $\cos (A - B)$
 - $\sin (A + B)$
 - $\cos 2A$
 - $\sin 2A$
- If $\cos A = \frac{12}{13}$, and $\angle A$ is in quadrant IV, find the exact value of $\sin 2A$.

