

6. Find the exact value of each expression. Do not use calculator. Use reference angles, properties of odd and even functions, tables.

a) $\cos 240^\circ$ **b)** $\tan(-\frac{\pi}{6})$ **c)** $\sec(-\frac{2\pi}{3})$ **(d)** $\sin(-\frac{11\pi}{6})$

e) $\tan 240^\circ$ **f)** $\sin(-\frac{\pi}{6})$ **g)** $\csc(-\frac{5\pi}{6})$ **h)** $\cos(\frac{21\pi}{6})$

7. Determine the amplitude, the period, and the phase shift of each function, then graph one period of the function.

(a) $y = 3 \sin(3x - \frac{3\pi}{4})$ **(b)** $y = -\frac{1}{2} \cos(2x + \frac{\pi}{2})$

8. Find the exact value of each expression. Do not use a calculator.

a) $\cos^{-1}(\frac{\sqrt{2}}{2})$ **b)** $\sin(\tan^{-1}(\sqrt{3}))$ **c)** $\sin^{-1}(\cos \frac{\pi}{6})$

d) $\sin^{-1}(\frac{\sqrt{2}}{2})$ **e)** $\cos(\cot^{-1}(\sqrt{3}))$ **f)** $\cos^{-1}(\sin \frac{\pi}{6})$

g) $\sin(60^\circ - 45^\circ)$ **h)** $\tan(\frac{\pi}{3} + \frac{\pi}{4})$ **i)** $\cos(120^\circ)$

9. Verify the given identities

(a) $\cot x \sec x \sin x = 1$ **(b)** $\cos t \cot t = \frac{1 - \sin^2 t}{\sin t}$

(c) $\cos(x + \frac{3\pi}{2}) = \sin x$

10. Solve the given equations for x from interval $[0, 2\pi)$

(a) $\sin 3x = -\frac{\sqrt{2}}{2}$ **(b)** $7 \cos \theta + 9 = -2 \cos \theta$ **(c)** $3 \tan^2 x - 9 = 0$