

Trigonometric Functions- HW Problems

1. Evaluate:

a. $\cos\left(\frac{\pi}{3}\right)$

b. $\sin\left(\frac{3\pi}{4}\right)$

c. $\tan\left(\frac{3\pi}{4}\right)$

d. $\sec\left(\frac{5\pi}{6}\right)$

e. $\cot\left(\frac{5\pi}{3}\right)$

f. $\cos\left(-\frac{\pi}{6}\right)$

g. $\sin\left(-\frac{\pi}{6}\right)$

h. $\csc\left(\frac{7\pi}{3}\right)$

i. $\cos\left(\frac{3\pi}{2}\right)$

j. $\sin(13\pi)$

k. $\sin\left(\frac{\pi}{3} + \frac{\pi}{4}\right)$

2. Find all solutions of:

a. $2\sin^2 x + \sin x - 1 = 0.$

b. $\sin x + \sin(2x) = 0$

c. $\cos x - \cos^2 x - \sin^2 x = -\frac{1}{2}$

3. Sketch a graph of:

a. $y = 3 \sin(2x)$

b. $y = 2 \cos x$

c. $y = \tan\left(x + \frac{\pi}{4}\right)$

4. Use trigonometric identities for $\cos(2x)$ to show:

a. $\sin^2 x = \frac{1}{2} - \frac{1}{2} \cos(2x)$

b. $\cos^2 x = \frac{1}{2} + \frac{1}{2} \cos(2x)$