

5.3 - Trigonometric Functions of Any Angle

Review Problems

1. Evaluate the following:

(a) $\sin\left(\frac{\pi}{4}\right)$

(b) $\tan(30^\circ)$

(c) $\sec\left(\frac{\pi}{6}\right)$

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

Basic Knowledge

2. Evaluate the following:

(a) $\sin\left(\frac{\pi}{4}\right)$

(d) $\cos\left(\frac{7\pi}{6}\right)$

(g) $\csc\left(-\frac{25\pi}{3}\right)$

(b) $\cos\left(\frac{5\pi}{3}\right)$

(e) $\cot\left(-\frac{5\pi}{2}\right)$

(h) $\tan(2\pi)$

(c) $\sec\left(-\frac{\pi}{2}\right)$

(f) $\sin\left(-\frac{3\pi}{2}\right)$

(i) $\csc(-60^\circ)$

(j) $\cot(-135^\circ)$

Intermediate Knowledge

3. For each problem below find the exact values of $\sin(\theta)$ and $\cot(\theta)$ given the following information:

(a) $\cos(\theta) = \frac{3}{4}$, and $-\frac{\pi}{2} < \theta < 0$

(b) $\tan(\theta) = -2$, and $\csc(\theta) > 0$

Advanced Knowledge

4. If $\sin(\theta) = -\frac{2}{5}$ find the given values (hint: draw all possibilities of θ and the following angles in standard position):

(a) $\sin(-\theta)$

(b) $\sin(\pi - \theta)$

(c) $\sin(2\pi - \theta)$