Chapter 3 Review Exercises

1. For each of the following, a) draw the given angle in standard position, and b) identify the reference angle, $\hat{\theta}$.

a) $\theta = 605°$ **b)** $\theta = 830°$ **c)** $\theta = -500°$ **d)** $\theta = -805°$

2. Identify the ordered pair on the unit circle at each of these angle measures.

a) $\theta = 390°$ **b)** $\theta = 495°$ **c)** $\theta = 540°$ **d)** $\theta = 600°$

e) $\theta = -240°$ **f)** $\theta = -315°$ **g)** $\theta = -510°$ **h)** $\theta = -630°$

3. Evaluate each.

a) sin (150°) b) cos (270°) c) csc (90°) d) cot (180°)

e) tan (495°) f) sec (600°) g) cos (-240°) h) tan (-120°)

i) sec (90°) j) tan (180°) k) cos (150°) l) sin (270°)

m) sin (-315°) n) cot (-150°) o) sec (510°) p) csc (585°)

4. Evaluate each.

a) $\csc\left(\frac{2\pi}{3}\right)$ b) $\tan\left(-\frac{4\pi}{3}\right)$ c) $\cot\left(\frac{7\pi}{6}\right)$ d) $\cos\left(\frac{5\pi}{3}\right)$

e) $\csc(5\pi)$ f) $\sin\left(\frac{7\pi}{2}\right)$ g) $\cot\left(-\frac{7\pi}{4}\right)$ h) $\sin\left(\frac{3\pi}{4}\right)$

i) $\tan\left(\frac{7\pi}{6}\right)$ j) $\sec\left(\frac{5\pi}{3}\right)$ k) $\sin\left(\frac{2\pi}{3}\right)$ l) $\cot\left(-\frac{4\pi}{3}\right)$

m) $\sin\left(-\frac{7\pi}{6}\right)$ n) $\cos\left(\frac{3\pi}{2}\right)$ o) $\sec(5\pi)$ p) $\tan\left(\frac{7\pi}{2}\right)$

5. Use a conversion multiplier to find the radian or degree equivalent.

a) $200°$ b) $15°$ c) $72°$ d) $27°$

e) $\frac{7\pi}{9}$ f) $\frac{3\pi}{20}$ g) $\frac{11\pi}{30}$ h) $\frac{13\pi}{12}$

6. For each, based on the given information, find the value(s) of θ, $0° \le \theta < 360°$.

a) $\sin\theta = -\frac{1}{2}$, θ in QIV

b) $\cos\theta = \frac{\sqrt{2}}{2}$, θ in QIV

c) $\tan\theta = -1$, θ in QII

d) $\csc\theta = -\frac{2\sqrt{3}}{3}$, θ in QIII

e) $\cot\theta = -\sqrt{3}$, θ in QIV

f) $\sec\theta = -2$, θ in QII

7. Given the following information, find t. Note: The restrictions on t are not necessarily the same for each exercise.

a) $\tan(t) = 1$, $0 \le t \le \pi$

b) $\cos(t) = \frac{\sqrt{2}}{2}$, $\pi \le t \le 2\pi$

c) $\cot(t) = \frac{\sqrt{3}}{3}$, $\frac{\pi}{2} \le t \le \frac{3\pi}{2}$

d) $\sec(t) = 1$, $\pi \le t \le 2\pi$

e) $\sin(t) = -\frac{\sqrt{3}}{2}$, $\frac{\pi}{2} \le t \le \frac{3\pi}{2}$

f) $\csc(t) = -2$, $\frac{\pi}{2} \le t \le \frac{3\pi}{2}$

8. Given $f(t) = -3\cos(2t)$, find

a) $f\left(\frac{\pi}{2}\right)$ b) $f\left(\frac{2\pi}{3}\right)$ c) $f\left(\frac{5\pi}{8}\right)$ d) $f\left(\frac{11\pi}{12}\right)$

9. Given $f(t) = \csc\left(t + \frac{\pi}{2}\right)$ find

a) $f\left(\frac{\pi}{3}\right)$ b) $f\left(\frac{3\pi}{4}\right)$ c) $f\left(\frac{7\pi}{6}\right)$ d) $f\left(\frac{5\pi}{3}\right)$