Math 36

Test 2 (Ch. 3 & 4) Pretest

1. 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) $\csc(585°)$

2. 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) $\tan\left(\frac{7\pi}{2}\right)$

3. 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) $\frac{13\pi}{12}$

4. 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

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

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

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

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

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

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

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

7. Graph **two full periods** of each function. Mark each important value along the x- and y-axes.

a) $y = -2\cos\left(\frac{4}{5}x\right)$

a) $y = -2\sin\left(\frac{2}{3}x\right)$

b) $y = 3\csc\left(\frac{6}{5}x\right)$

8. Graph **two full periods** of each function.

a) $y = -\tan(3x)$

b) $y = \cot\left(\frac{1}{2}x\right)$

10. 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) $f\left(\frac{11\pi}{12}\right)$

11. 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) $f\left(\frac{5\pi}{3}\right)$