

NAME: Solution

MAC 1147 Section 3089
Quiz Eight

Please show all of your work in a NEAT and ORGANIZED fashion.

1. Use the given function value and the trigonometric identities to find the indicated trigonometric functions. (Assume θ lies in Quadrant I.)

$$\cos(\theta) = \frac{2}{3}$$

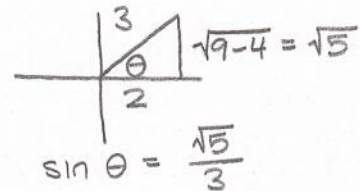
- (a) (2 points) $\sin(\theta)$

$$\sin^2(\theta) + \cos^2(\theta) = 1$$

$$\sin^2(\theta) + \frac{4}{9} = 1$$

$$\sin^2(\theta) = \frac{5}{9} \rightarrow \sin \theta = \frac{\sqrt{5}}{3}$$

OR



- (b) (1 point) $\tan(\theta)$

$$\tan(\theta) = \frac{\sin \theta}{\cos \theta} = \frac{\sqrt{5}/3}{2/3} = \frac{\sqrt{5}}{2}$$

2. (3 points) Find two solutions of the following equation. Give your answers in degrees AND radians.

$$\csc(\theta) = 2 \rightarrow \sin \theta = \frac{1}{2}$$

Quadrant I; $\theta = \frac{\pi}{6}, 30^\circ$

Quadrant II; $\theta = \frac{5\pi}{6}, 150^\circ$

3. (3 points) Sketch the graph of g . Include two full periods.

$$g(x) = 2 \cos(x + \pi)$$

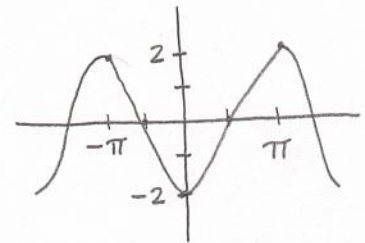
Amplitude = 2, period = 2π

$$x + \pi = 0$$

$$x + \pi = 2\pi$$

$$x = -\pi$$

$$x = \pi$$



→ Key Points:

$$(-\pi, 2), \left(-\frac{\pi}{2}, 0\right), (0, -2), \left(\frac{\pi}{2}, 0\right), (\pi, 2)$$