Quiz 3 (20 pts.)

Name: _____

True or False (1 pt. each)

Answer the following by circling TRUE or FALSE. If the answer is false you must explain why in the space provided for full credit.

1.)   **T   F**   _____   The point $\left(\dfrac{\sqrt{3}}{2}, \dfrac{1}{2}\right)$ lies on the unit cirlce.

2.)   **T   F**   _____   A car that travels around a circular race track at 185 miles per hour is an example of angular velocity.

3.)   **T   F**   _____   Given $\cos x = \dfrac{3}{4}$, $\sec x = \dfrac{1}{4}$

4.)   **T   F**   _____   The exact value of $\tan x$ if the terminal side of x contains $P = (0, 1)$ is 0.

5.)   **T   F**   _____   The range for sine and cosine is given by $\{y : -1 \leq y \leq 1\}$ where y is a real number.

Short Answer

6.) (3 pts.) A bicycle is ridden at a speed of 7.0 m/sec. If the wheel diameter is 64 cm, what is the angular velocity of the wheel in radians per second?

7.) (2 pts.) Find the linear velocity V of a point on the rim of a wheel when $r = 12$ cm and $\omega = 0.7$ rad/min.

8.) (5 pts.) Find the exact value of each of the other five trigonometric functions for an angle x given that $\tan x = -\dfrac{1}{2}$ and $\cos x > 0$.

(a) $\sin x$ (d) $\sec x$

(b) $\cos x$ (e) $\cot x$

(c) $\csc x$

9.) (5 pts.) Find the exact value of the other five trigonometric functions for the angle x given that $\sin x = \dfrac{3}{5}$ and x is a Quadrant I angle.

(a) $\cos x$ (d) $\sec x$

(b) $\tan x$ (e) $\cot x$

(c) $\csc x$