

Math 173 – Quiz #4

March 12, 2015

Name: _____

Instructor: Patricia Wrean

Total: 40 points

1. Convert the angles in radians to degrees and the angles in degrees to radians. Show your work and leave any answers in radians as multiples of π . (4 points)

a) 36° _____

b) $\frac{-5\pi}{9}$ _____

2. Use a calculator to evaluate the following. Round to two decimal places if the answer is approximate. (3 points)

a) $\sec\left(-\frac{2\pi}{5}\right)$ _____

b) $\tan^{-1}(1)$ _____

c) $\sin(-3)$ _____

3. Evaluate. Assume that any angles would be in the first quadrant. (3 points)

$$\sin\left(\tan^{-1}\left(\frac{x}{2}\right)\right)$$

4. Use the sum and/or difference identities to simplify the following (4 points)

$$\tan(\pi - x)$$

5. Solve, finding all solutions in $[0, 2\pi)$ or $[0, 360^\circ)$. (5 points)

$$\cos 2x = 0$$

6. Prove the following trig identity.

(5 points)

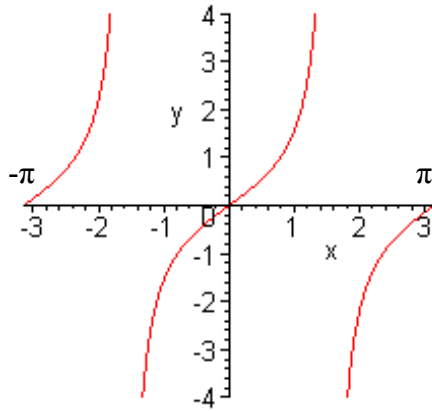
$$\frac{\sin 3x \cos 2x - \cos 3x \sin 2x}{\csc x} = \frac{\tan^2 x}{1 + \tan^2 x}$$

7. Simplify.

(5 points)

$$\frac{1 - \cos 2x}{1 + \cos 2x} + \frac{1}{1 - \csc^2 x}$$

8. Consider the graph below. State which of the six basic trig functions it is by giving the equation of the graph. Sketch in the positions of any asymptotes. Calculate the function's period and range. Is this function even, odd, or neither? (5 points)



equation: _____

period: _____

range: _____

9. Sketch a graph of the function $y = \sin(-2x) + 1$, and state the function's period and amplitude. Include at least one full period in your sketch. (6 points)

period: _____

amplitude: _____

