Math 1060 Assignment 1

Due: September 4, 2014

Show all your work!!

Section 4.1

Problem 1 Draw the following angles in standard position. All angles are given in radians. Make sure to draw little arrows indicating the direction of the angle!

a. $\dfrac{\pi}{3}$

b. -2π

c. $\dfrac{5\pi}{2}$

d. 3.14159265

Problem 2 Find two **positive** angles coterminal to $\dfrac{\pi}{4}$ rad. State your answers in radians.

Problem 3 Find two **negative** angles coterminal to $\dfrac{5\pi}{7}$ rad. State your answers in radians.

Problem 4 Find the complement and supplement of each angle, if one exists. Note that an angle β is called the *complement* of α if α and β are complementary angles. Similarly, an angle β is called the *supplement* of α if α and β are supplementary angles. Each angle is given in radians. State your answer in radians.

a. $\dfrac{\pi}{4}$

b. $\dfrac{5\pi}{6}$

c. 2

Problem 5 Convert the following angles from radians to degrees. Simplify your answers.

a. $\dfrac{\pi}{4}$

b. $-\dfrac{5\pi}{6}$

c. $\dfrac{7\pi}{6}$

Problem 6 Convert the following angles from degrees to radians.

a. $405°$

b. $-60°$

c. $215°$

Problem 7 Find the length of an arc on a circle of radius $r = 3$in intercepted by a central angle $\theta = \dfrac{\pi}{3}$ rad.

Problem 8 Find the length of an arc on a circle of radius $r = 3$in intercepted by a central angle $\theta = 215°$.

Section 4.2

In this section, all angles are in radians. **Problem 9** Compute the coordinates of the points on the unit circle that correspond to the following angles:

a. $\dfrac{\pi}{4}$

b. $\dfrac{2\pi}{3}$

c. $\dfrac{4\pi}{3}$

Problem 10 Evaluate the six trigonometric functions (if possible) on the following angles:

a. $\dfrac{\pi}{4}$

b. $\dfrac{2\pi}{3}$

c. $\dfrac{\pi}{2}$

d. π

Problem 11 Evaluate the sine and cosine of the following angles:

a. $\dfrac{5\pi}{6}$

b. $\dfrac{11\pi}{6}$

c. $\dfrac{17\pi}{6}$

Problem 12 Suppose θ is some angle so that $\sin(\theta) = 0.3$. Evaluate:

a. $\sin(-\theta)$

b. $\csc(\theta)$

Problem 13 Now suppose that θ is some angle so that $\cos(\theta) = 0.3$. Evaluate:

a. $\cos(-\theta)$

b. $\sec(\theta)$