## Mth 114 – Trigonometry – Practice Exam 4 – Part I

NOTE: This exam should not be taken as a complete list of possible problems. It is merely intended to be an example of the length and difficulty level of the regular exam. To best utilize it as a *practice* exam, give yourself 55 minutes with no distractions. Try to emulate the classroom environment as much as possible. <u>Calculators are NOT ALLOWED on this portion.</u>

1. Find the exact value of each real number *y*.

a. 
$$y = \cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$$

b. 
$$y = \tan^{-1}(-1)$$

c.  $y = \sec^{-1} 2$ 

2. Find the degree measure of 
$$\theta$$
 if  $\theta = \arcsin\left(\frac{\sqrt{2}}{2}\right)$ .

3. Find the exact value of  $\sec\left(\sin^{-1}\left(-\frac{1}{5}\right)\right)$ .

For problems 4-6, solve each equation for exact solutions over the interval  $[0, 2\pi)$ .

4.  $3 \tan x - 1 = 2$ 

 $5. \quad 2\sin^2 x + \sin x = 1$ 

6.  $2\sin 3x = 1$ 

For problems 7 and 8, solve each equation for solutions over the interval  $[0^\circ, 360^\circ)$ .

7.  $2 \sec x + 1 = \sec x + 3$ 

8.  $\sin\theta\cos\theta = \cos\theta$ 

9. Solve  $y = \sin x - 2$  for x.

In problems 11 and 12, solve each equation exactly.

10.  $4\pi + 4 \tan^{-1} y = \pi$ 

11. 
$$\sin^{-1} x + \tan^{-1} \sqrt{3} = \frac{2\pi}{3}$$

## Mth 114 – Trigonometry – Fall, 2004 – Practice Exam 4 – Part II

## Calculators ARE ALLOWED on this portion.

12. Use a graphing calculator to find all solutions to the equation  $\cos x = 0.25$  in the interval  $[0, 2\pi)$ .

13. Use a graphing calculator to find all solutions in the interval  $[0, 2\pi)$  to the equation  $x^2 - 2x + \sin x = 0$ . Round any answers to 6 decimal places, if necessary.