Math 150: Trigonometry
Instructor: Hugh Cassidy
Exam 1
Monday, June 20th, 2005

Instructions: Attempt all questions. You must show your work to receive full credit.

Name:_____

1. Find the radian measure of the following angles. (Answers must be exact, do not use a calculator) [9 points]

a. 270°

b. 225°

c. -135°

2. Find the exact values. [12 points]

a. $\sin(^{7\pi}/_{4})$

b. $\cos(^{-3\pi}/_{4})$

c. $\sin(^{4\pi}/_{3})$

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3. State <u>and</u> prove the Pythagorean Identities [10 Points]

4. Consider the angle t = 35.3^{o} Find:

a. A positive angle that is coterminal with t. [3 points]

b. A negative angle that is coterminal with t. [3 points]

c. An angle that is complementary to t. [4 points]

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5. Find all solutions to the equation: Cos $\theta = {}^{1}/_{2}$ where θ is in [0, 2π
[8 **points]**

6. If Cos $\theta = {}^{4}/_{5}$ and θ is in quadrant 4 find: [9 points]

a. Sin θ

b. Tan θ

c. Csc θ

7. If θ is in quadrant 2 with its terminal side on the line y = -2x find the values of sin, cos, tan and sec at θ [12 points]

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8. **Solve ΔABC if $\gamma = 90^o$, $\alpha = 35^o$ and a = 5** **[10 points]**

9. **Find the amplitude and phase shift of the equation:**
$y = -2\sin(3x + {}^{4\pi}/_{3})$ **[10 points]**

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10. A person is looking at the top of a smoke stack and the angle of elevation is 58° . If they are standing 40 feet from the smoke stack what is it's height. [10 points]

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