Test 4 MAT 104 Summer 2008 Name _____

This is a take-home test. You may use your notes, the book, etc. This test is due on Tuesday, September 9, 2008 at class time. <u>Late tests will not be accepted!</u> Remember to simplify all of your answers and show your work for credit!

Change the following to radian measure:

1) 215^o 2) 125^o

Change the following to degree measure:

3) $\frac{5\pi}{8}$ radians 4) 4.6 radians

Find the following, if they exist. <u>Round answers to four decimal places.</u>

5) $\sin 627^o$ 6) $\csc 248^o$ 7) $\sec 316^o$ 8) $\tan 118^o$ 9) $\cot 21^o$

Solve for x.

10) $\tan 60^o = \frac{x}{4.8}$ 11) $\sec x = 4.821$ 12) $\cos 132^o = \frac{3.5}{x}$ 13) $\cot 158^o = \frac{x}{9}$

14) Given a circle having a radius of 24 cm, an angle θ intercepts an arc length of 16 cm.
a) Find the angle measure θ in radians. b) Find the angle measure θ in degrees.

15) In a circle with a radius of 16.4 feet, how long is an arc associated with a central angle of $\frac{7\pi}{4}$ radians?

Find the angle measure between 0^o and 360^o that is coterminal with the given angle measure.

16) 942^o 17) -879^o 18) -26^o 19) 1457^o

Name the two angles between 0^o and 180^o having the following measures. Round answers to the nearest tenth of a degree.

20) $\sin B = 0.345$ 21) $\sin Q = 0.8$ 22) $\sin A = 0.0157$ 23) $\sin T = 0.9942$

24) From a highway overpass 52 feet above the road, the angle of depression of a car parked on the side of the road is measured at 22.3^o. How far away is the car from a point on the highway directly below the overpass?

25) From a 150-foot observation tower on the shoreline, a Coast Guard officer sights a boat in difficulty. The angle of depression from the sight of the officer to the boat is 11^o. How far is the boat from the base of the observation tower on the shoreline?

26) An airplane travels 220 miles in a direction of 200^o from Atlanta. At the end of this time:
a) How far south of Atlanta is the plane? b) How far west of Atlanta is the plane?

27) Convert 32^o 17' 26" to decimal degree notation. Round your answer to four decimal places.

28) Convert 151.458^o to degrees, minutes, and seconds, if necessary. Round to the nearest second.

29) Find the complement of 57^o 18' 52". 30) Find the supplement of 57^o 18' 52".