Trigonometry (MAC 1114)   **Review Problems for Final Exam**

1. Covert each of the following degree measures to radians. Leave answers as multiple of %
   a) 135°   b) 12°   c) -315°

2. Covert each of the following degree measures to degrees.
   a) $\frac{7\%}{6}$ b) $\frac{11\%}{3}$ a) 5 radians

3. The terminal side of angle Ł in standard position goes through (-3, -4). Find the values of the six
    trigonometric functions of Ł.

4. Draw 135° in standard position. Find a point on the terminal side and then find
   sin 135°, cos 135°, tan 135° without using a calculator.

16. Find the domain, range, period, and amplitude of each of the following functions.

a) $y = \sin x$ b) $y = \cos x$ c) $y = \tan x$ d) $y = \csc x$ e) $y = \sec x$ f) $y = \cot x$.

17. Find the amplitude, period, and phase shift of the function, and sketch the graph of one compete period.   a) $y = -\sin 3x$ b) $y = \cos\left(x - \frac{\%}{2}\right) + 1$

18. Evaluate the exact values of the following without a calculator.

a) $\tan\left(\cos^{-1}\left(\frac{2}{7}\right)\right)$ b) $\csc\left(\tan^{-1}\left(\frac{3}{4}\right)\right)$

19. True or False:

a) $\sin(-θ) = -\sin θ$　　　　b) $\sec(-θ) = \sec θ$　　　　c) $\tan(-θ) = \tan θ$

d) $\cot θ = \frac{\cos θ}{\sin θ}$　　　　e) $\sin θ = \frac{1}{\sec θ}$　　　　f) $\sec θ = \frac{\text{adjacent}}{\text{hypotenuse}}$

g) $1 + \cot^2 θ = \csc^2 θ$　　　　h) $\tan θ = \frac{\text{adjacent}}{\text{opposite}}$

20. Fill in the blanks without using a calculator:

a) $\tan 53° = \cot$ __

b) -225° is in quadrant _____

c) cos is positive in QI and _____

d) tan is positive in QI and _____

e) $1 + \tan^2 θ =$ _____

f) $1 - \sin^2 θ =$ _____

g) $\csc θ = \frac{1}{?}$

Verify the following identities.

21. $\frac{1 \quad \cos}{1 \quad \cos} = (\csc \quad \cot \ )$

22. $\frac{\cos}{} \quad \frac{\sin}{} = \sin \quad \cos$

Find the missing parts of each of the following triangles.

39. $a = 39$ cm, $C = 32°$, $B = 110°$ 40. $b = 100$ ft, $c = 60$ ft, and $C = 28°$

41. $a = 16$ m, $c = 7$ m, $B = 95°$ 42. $a = 15$ ft, $b = 25$ ft, $c = 28$ ft

Find the area of each of the following triangles:

43. $a = 4$, $A = 40°$, $B = 60°$ 44. $a = 76.3$ ft, $b = 109$ ft, $c = 98.8$ ft

Eliminate the parameter t from each of the following parametric equations.

45. $x = 3 \sin t$ and $y = 4 \cos t$ 46. $x = \sec t$ and $y = \tan t$

47. $x = 4 \sin t - 5$ and $y = 4 \cos t - 3$ 48. $x = 5 \sin t$ and $y = -2 \sin t$

49. Write the following complex number in trigonometric form, with Ł between 0 and 2%

$4\sqrt{3} - 4i$

50. Given $z_1 = 3(\cos 60 \quad \sin 60)$ and $z_2 = 2(\cos 90 \quad \sin 90)$, find $z_1 z_2$ and z_1/z_2.