Trigonometry (MAC 1114)   <u>**Review Problems for Final Exam**</u>

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) $y = \cos(x - \frac{\%}{2}) + 1$

18. Evaluate the exact values of the following without a calculator.
   a) $\tan(\cos^{-1}(\frac{2}{7}))$ b) $\csc(\tan^{-1}(\frac{3}{4}))$

19. True or False:
   a) $\sin(-\theta) = -\sin\theta$ b) $\sec(-\theta) = \sec\theta$ c) $\tan(-\theta) = \tan\theta$
   d) $\cot\theta = \frac{\cos\theta}{\sin\theta}$ e) $\sin\theta = \frac{1}{\sec\theta}$ f) $\sec\theta = \frac{adjacent}{hypotenuse}$
   g) $1 + \cot^2\theta = \csc^2\theta$ h) $\tan\theta = \frac{adjacent}{opposite}$

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) $1 + \tan^2\theta =$ _____   f) $1 - \sin^2\theta =$ _____   g) $\csc\theta = \frac{1}{?}$

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 Ɫ between 0 and 2%

   $4\sqrt{3} - 4i$

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