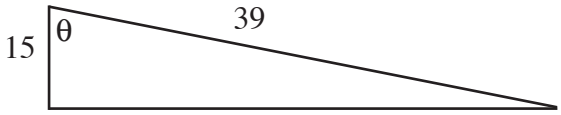
Beverly Hills High School -- FST Trigonometry -- Spring '16 -- Test #1 -- 100 points

On this and all following exams, give neat and complete answers, those that clearly show your understanding of the problem and its solution. In other words, show all your work. If it looks like a right angle, it is.

1) For this triangle, give the values of the six trigonometric functions for angle θ: (five points)



2) Give the values of the six trigonometric functions for θ = 240° :

3) An equation of the terminal side of an angle θ in standard position is given with a restriction on x. Find the values of the six trigonometric functions of θ.

$-5x - 3y = 0,\ x \le 0$

4) If sin θ = -3/4 in quadrant III, find the value of

(cos θ)(cot θ)

5) Show how the expression $\sin^2\theta + \cos^2\theta = 1$ is derived from a circle of radius R.

6) Complete the chart below: (ten points here)

	0°	30°	45°	60°	90°	
sin θ						
cos θ						
tan θ						

7) Convert each of the following to radians from degrees or vice-versa. Three points each.

235° = _____ $\frac{7\pi}{5}$ = _____ -324° = _____

8) cot 35° = tan _____ (three pts.)

9) Find a solution to this equation.
Assume all unknown angles are acute.

$\cos(5\theta + 2°) = \sec(2\theta + 4°)$

10) What is the reference angle for an angle of 1540° ?

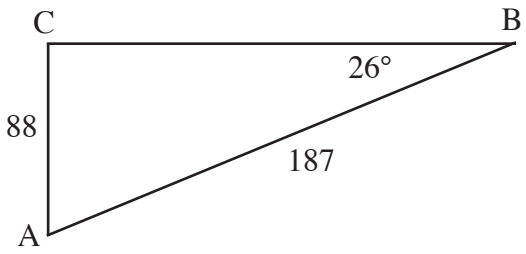
11) True or False, and why?

$\cos 60° = 2\cos^2 30° - 1$

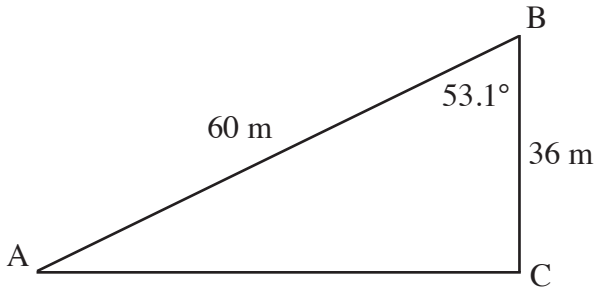
12) What is the coterminal angle, between 0 and 2π, for $-5\pi/18$?

Solve each right triangle.

13)



14)



15) Give two angles in [0°, 360°] that satisfy $\cos\theta = -\frac{\sqrt{3}}{2}$.

16) csc $(\tan^{-1} 5/12)$ =

17) tan 330° = _____

18) In QIII, sec $(\sin^{-1} (-7/24))$=

19) $[5 \tan 135° + 2 \cos(3\pi/2)]^2$ =

20) EXTRA CREDIT -- All or Nothing -- Guessing is okay. Five points.

If a chicken and a half lays an egg and a half in a day and a half, how long will it take ten chickens to lay ten eggs?