Beverly Hills High School -- IAT -- Quest #5 -- Spring 2016 -- 70 points

As usual, show all of your work. Partial credit for partial achievement. Be neat, clear and complete. Each question is five points unless specified otherwise. No calculators needed.
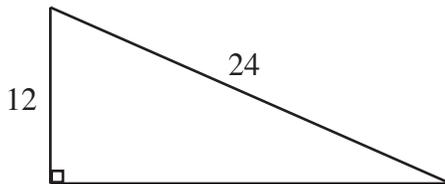
1) What does SOHCAHTOA stand for? _____

_____

_____.

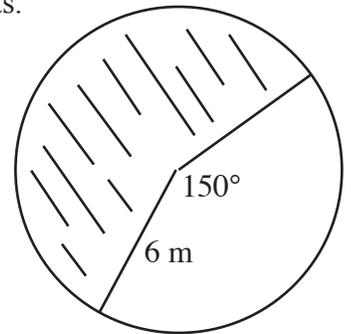2) Write down the six trigonometric functions of θ, showing which are reciprocals of the others.

3) Complete this table of values:

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

4) Solve this right triangle for everything that is missing.

5) Find the area of the shaded sector. Leave the answer in terms of π. Give units.

6) A model train travels 60π" around a circular track and covers 30° of arc. What is the diameter of the track? Leave the answer in terms of π. Give units.

Three points on #7 and #8, four points on #9.

7) cot 210° = _____   8) sin 120° = _____

9) (cos 90° - sin 150° + tan 135°)^2 = _____

Three points each.

10) Convert to radians: 300° = _____

11) Convert to degrees: $8\pi/5$ = _____

12) 0°, 90°, 180°, 270° and 360° are all known as _____ angles.

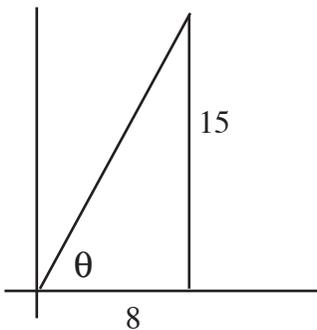13) State all solutions for   14) State all solutions for

   $\cos^{-1}(-1/2) =$ $\csc^{-1}\sqrt{2}$

15) Use the given point on the terminal side of the angle to find the values of all six trigonometric functions:
     (Six points on this one.)

16) Using trig functions and the Pythagorean Theorem, show how we derived the identity $\sin^2\theta + \cos^2\theta = 1$
     from this triangle.