Name: _____

1. Find the reference angle α for $\theta = 165$ degrees and write cos θ in terms of the reference angle α.. Then check both sides with your calculator. Draw a diagram showing both θ and α.

2. Find two angles θ between 0 and 360 degrees for which the following is true.   cos θ = - 0.4. Then check both answers with your calculator.

3. Find one angle θ between 0 and 360 degrees for which both of these are true.
    sec $\theta = 1.6$ and sin θ is negative. Then check both conditions with your calculator.

4. a. Convert 70 degrees to an angle in radians.   b. Convert 12 radians to an angle in degrees.

    c. Convert $\pi/9$ to and angle in degrees.

5. Evaluate these with your calculator.

    a. $\sin(10°)$ $\sin(10)$ b. $\sec(\pi/3°)$ $\sec(\pi/3)$

6. Given a circular sector with area A, central angle θ, radius r and arc length s,

    a. If $r = 6$ and $\theta = 60°$, find s and A.   b. If $A = 12$ and $s = 5$, find θ and r.

7. A section of sidewalk is a circular sector or radius 4.00 feet and central angle 65.1°. What is the area of the sidewalk?

8. A rotating circular restaurant at the top of a hotel has a diameter of 40 m. If it completes one revolution in 30 minutes, what is the velocity of its outer surface?