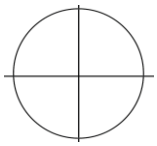
Honors Precalculus Name:_____ Per: _____

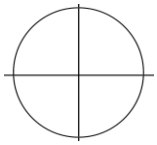
Chapter 4 PRACTICE TEST

1. For each, sketch the angle in standard position and list two angles that are coterminal (one positive and one negative).

a) $\frac{2\pi}{3}$



b) $\frac{-7\pi}{6}$



2. For each angle, convert between radians and degrees.

a) $\frac{\pi}{4} =$ _____°

b) $-\frac{11\pi}{6} =$ _____°

c) $210° =$ _____

d) $90° =$ _____

3. For each angle, find the complement and the supplement, if possible, and give your answer in degrees.

a) $\theta = \frac{\pi}{5}$

b) $\theta = \frac{3\pi}{5}$

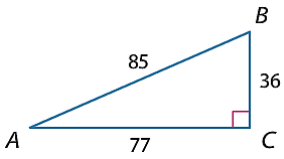
4. Use the triangle below to answer. Write answer as a fraction.

$\sin(A) =$

$\cos(B) =$

$\tan(A) =$

$\sec(B) =$



5. Use trig identities to prove the following.

a) $\cos(\theta)\sec(\theta) = 1$

b) $\frac{\cot(\theta)+\tan(\theta)}{\cot(\theta)} = \sec^2(\theta)$

6. List the coordinates of the point (x,y) on the unit circle corresponding to each reference angle.

a) $\theta = \frac{4\pi}{3}$

b) $\theta = \frac{-5\pi}{6}$

7. Evaluate $\cos(6\pi)$, without a calculator, by using its period as an aid.

8. Evaluate $\sin\left(\frac{11\pi}{4}\right)$, without a calculator, by using its period as an aid.

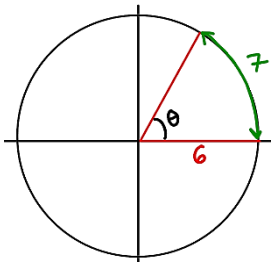
9. a) A car wheel that has a radius of 14 in. rotates 3450°. Convert that to radians.

b) Use your answer to (a) and the car's radius to determine how far forward the car moved.

10. Find the value of θ in radians and degrees.

Radians =

Degrees =



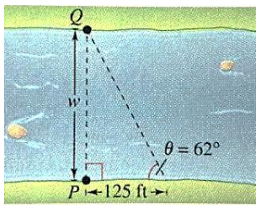
11. Use a calculator to evaluate and round to 4 decimal places.

$\sin(52°12') =$

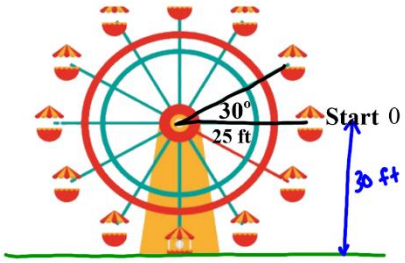
$\csc(14°45') =$

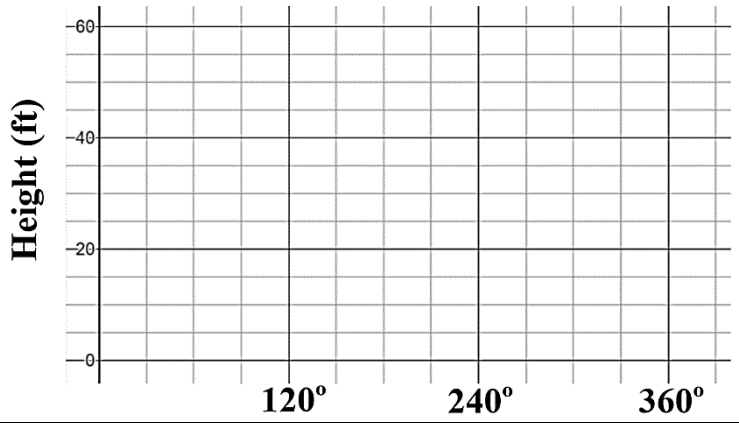
$\tan\left(\frac{3\pi}{20}\right) =$

12. A surveyor is determining the width of a river, so marks a point P, walks 125 feet, and sights the angle to Q at 62°. What is the width of the river?



13. A rider on a 25-ft radius ferris wheel is currently located at position 0 on the picture. Determine how high off the ground the rider is at each of the other 11 locations as the carriage moves around (each position is 30° from the prior).



Angle	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°
Height off ground	30											

14. Use the table you made in problem 13 to plot the points and sketch in what the graph for this situation looks like.