Activity 5 (Review)
Math 112

Lecture Time: 10:00 12:00 2:00
Recitation Time:

1. Convert each angle from radians to degrees or degrees to radians.
   (a) $\pi \over 36$
   (b) $-105^\circ$

2. A ferris wheel rotates $\frac{2}{3}$ of a full rotation. What is the radian measure of the angle formed by this rotation?

3. A circle has radius 3 inches. Find the length of an arc intercepted by a central angle of $\theta = 15^\circ$. Find the area of the sector of the circle formed by this angle.

4. Solve the triangle.

5. An angle is in standard position. Its terminal side passes through the point $(-1, 2)$. Find the value of all 6 trig functions of the angle.

6. Suppose sin $\theta = -\frac{4}{5}$ and sec $\theta = \frac{5}{3}$. Find the values of the other four trig functions of $\theta$. In what quadrant is this angle?
7. Determine the amplitude, period, phase shift and vertical shift of the function

\[ f(t) = -3 \sin(2\pi * t - 4\pi) - 3. \]

Sketch a graph of \( f(t) \).

8. Solve the triangle

9. A clock is malfunctioning. The “seconds hand” is completing one full rotation in 50 seconds. The hand is 3 inches long. Determine the angular speed of the hand and the linear speed of it’s tip.

10. Suppose we know that \( \sin \theta = \frac{1}{4} \) where \( \theta \) is an angle measured in degrees. What is \( \sin(90^\circ - \theta) \)?

11. Evaluate each of the following:

   (a) \( \sin^{-1} \left( \frac{1}{2} \right) \)
   
   (b) \( \tan^{-1}(\sqrt{3}) \)
   
   (c) \( \cos^{-1}(2) \)
   
   (d) \( \sin(\sin^{-1} \left( \frac{1}{2} \right)) \).
   
   (e) \( \cos^{-1}(\cos 5\pi) \).

12. Simplify the expression \( \frac{(1+\sin \theta)(1-\sin \theta)}{\sin^2 \theta} \) as much as possible.