

Unit Circle**LEARNING PLAN**

(Chapter 1 & 2)

Skill/Understanding:	Review/Practice Problems
<p>Angles</p> <ul style="list-style-type: none"> <input type="checkbox"/> I understand that a radian is equal to an angle at the center of a circle whose arc is equal in length to the radius. <input type="checkbox"/> I can convert between radians and degrees and vice versa. <input type="checkbox"/> I understand what a reference angle is and how to determine the reference angle for a given angle. <input type="checkbox"/> I understand what a coterminal angle is and how to determine a coterminal angle to a given angle. 	<p>1-112, 2-10, 2-67, 2-115, and CL 2-161.</p>
<p>Unit Circle Coordinate Points</p> <ul style="list-style-type: none"> <input type="checkbox"/> I understand how $\sin(\theta)$ is related to the coordinate points on the unit circle. <input type="checkbox"/> I understand how $\cos(\theta)$ is related to the coordinate points on the unit circle. <input type="checkbox"/> I can use the equation of the unit circle $\sin^2(\theta) + \cos^2(\theta) = 1$ or $x^2 + y^2 = 1$ to determine if a point is on the unit circle. 	<p>2-48, 2-128</p>
<p>Special Angles</p> <ul style="list-style-type: none"> <input type="checkbox"/> I can approximate and draw special angles on the unit circle. <input type="checkbox"/> I can look at an angle drawn on the unit circle and approximate what special angle is shown. <input type="checkbox"/> I can determine the value of sine, cosine and tangent for special angles. <input type="checkbox"/> I understand how special right triangles(30-60-90 and 45-45-90) are related to the values for $\sin(\theta)$ and $\cos(\theta)$ for special angles. 	<p>1-111, 1-122, 1-134, 2-23, 2-100, 2-64, 2-142, 2-155, and CL 2-168.</p>
<p>Angular Motion</p> <ul style="list-style-type: none"> <input type="checkbox"/> I can solve real life problems involving rotations around a circular object and distance traveled to solve for the angular velocity. 	<p>2-24, 2-53, 2-101, and CL 2-162.</p>

PRACTICE PROBLEMS:

1) Convert each the following angle measures as specified below. Then, in radians, identify another angle that is coterminal with the given angle. Use exact values.

a. 48° to radians

b. -500° to radians

c. $\frac{13\pi}{12}$ radians to degrees

d. $-\frac{20\pi}{9}$ radians to degrees

2) Sean is riding his bicycle so that the wheel goes around 3 times each second.

a. How many radians per second is the bicycle wheel turning at?

b. If the diameter of the bicycle wheel is 26 inches, how fast is Sean riding in feet per second?

3) Sketch a graph of the unit circle then draw and label the following angles. Then state the sine, cosine, and tangent of each angle.

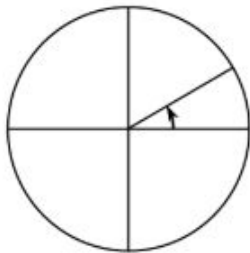
a. $\frac{\pi}{4}$

b. $-\frac{\pi}{3}$

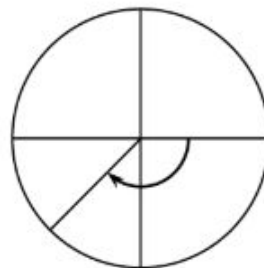
c. 3π

4) Below are two of the special angles that are used in the unit circle. Identify the radian measure for the angles shown. Remember counterclockwise angles are positive and clockwise angles are negative.

a.



b.



5) Show that the given point is on the unit circle. Then determine $\sin(P)$, $\cos(P)$, and $\tan(P)$.

P $(\frac{3}{5}, -\frac{4}{5})$