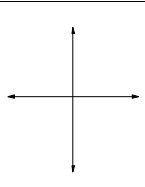
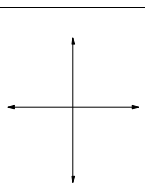
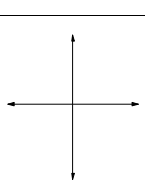
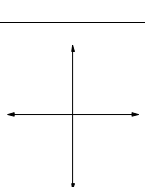
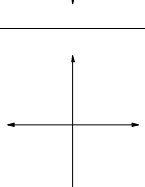
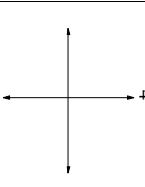
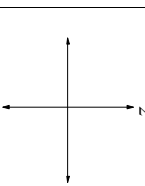
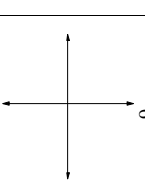
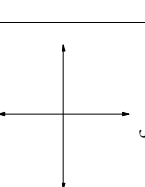
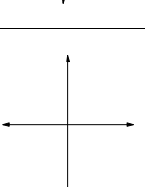


I. For each angle θ below, do the following:

- a.) Draw your angle with a colored marker. Include direction of angle given angle.
b.) If your angle is more than 360° , then indicate that in your drawing with "swirls".

1.) $\theta = 310^\circ$	2.) $\theta = -125^\circ$	3.) $\theta = 510^\circ$	4.) $\theta = -700^\circ$	5.) $\theta = -1350^\circ$
				
6.) $\theta = \frac{5\pi}{4}$	7.) $\theta = -\frac{\pi}{2}$	8.) $\theta = \frac{25\pi}{6}$	9.) $\theta = -\frac{10\pi}{3}$	10.) $\theta = 7\pi$
				

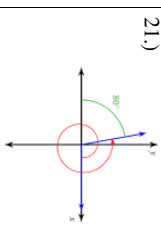
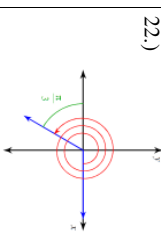
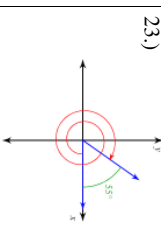
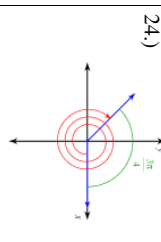
II. Complete the chart below about converting angle measures. Show work on line!

Degree Measure \rightarrow Radian Measure	Radian Measure \rightarrow Degree Measure
11.) $\theta = 155^\circ \rightarrow$ _____	15) $\theta = \frac{7\pi}{6} \rightarrow$ _____
12.) $\theta = -330^\circ \rightarrow$ _____	16) $\theta = \frac{\pi}{3} \rightarrow$ _____
13.) $\theta = 720^\circ \rightarrow$ _____	17) $\theta = \frac{26\pi}{15} \rightarrow$ _____
14.) $\theta = 246^\circ \rightarrow$ _____	18.) $\theta = -\frac{11\pi}{4} \rightarrow$ _____

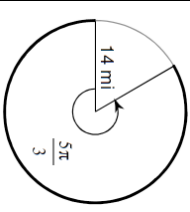
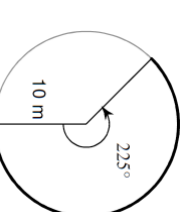
III. Find a positive and a negative coterminal angle for each given angle. Show work!

- 19.) $114^\circ \rightarrow$ positive coterminal angle = _____ negative coterminal angle = _____
20.) $-\frac{4\pi}{9} \rightarrow$ positive coterminal angle = _____ negative coterminal angle = _____

IV. Determine the measure of each angle. Keep units consistent.

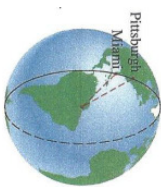
21.) 	22.) 	23.) 	24.) 
---	--	--	--

V. Use the Arc Length Formula: $s = r \cdot \theta$ or the Sector Area Formula: $A = \frac{1}{2} \cdot r^2 \cdot \theta$ for the problems below. Round to nearest tenth and include units. Show your work!

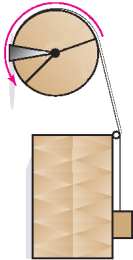
25.) 	a.) Arc Length	a.) Arc Length
	b.) Sector Area	b.) Sector Area
26.) 		
	b.) Sector Area	

27.) Find the central angle θ (in degrees) if the arc length is 18 cm and the diameter is 6 cm.	28.) If the sector area is 126.7 ft^2 and the central angle θ is 120° , find the length of the radius.
--	--

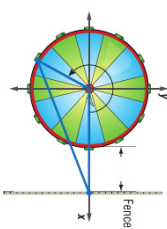
29.) Pittsburgh, PA and Miami, FL lie approximately on the same meridian. Pittsburgh has a latitude of 40.5° N and Miami has a latitude of 25.5° N. The radius of the earth is approximately 3,960 miles. What is the distance between the two cities?



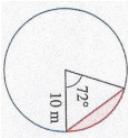
30.) A wheel is connected to a box by a cable. What is the radius of the wheel if the box moved 7.8 feet with a 135° angle counter-clockwise?



31.) Anthony's little brother gets on a carousel that is 8 meters in diameter. As the start of the ride, his brother is 3 meters from the ride entrance in the fence. How far will his brother be from the entrance after the carousel rotates $\frac{7\pi}{6}$?



32.) Using the figure below, find the following:



- a.) Find the perimeter of shaded region.
b.) Find the area of the shaded region.