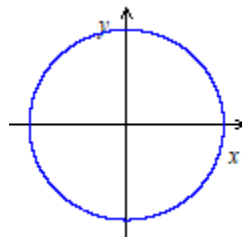
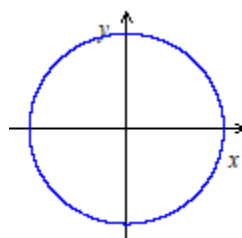


## Practice Worksheet: Angles and Arc-length

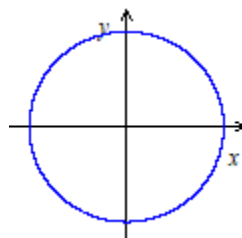
1. a. Draw  $140^\circ$  in standard position on the provided coordinate plane.



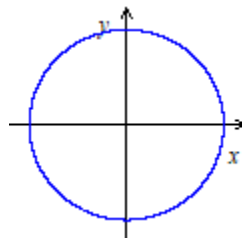
- b. Draw  $-250^\circ$  in standard position on the provided coordinate plane.



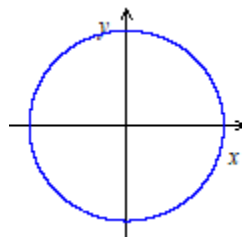
- c. Draw  $\frac{4\pi}{5}$  radians in standard position on the provided coordinate plane.



- d. Draw 4 radians in standard position on the provided coordinate plane.



- e. Draw  $-3$  radians in standard position on the provided coordinate plane.



2. Complete the table below.

$\theta$ (degrees)	$0^\circ$	$30^\circ$		$60^\circ$	$90^\circ$		$270^\circ$	$360^\circ$	
$\theta$ (radians)			$\frac{\pi}{4}$			$\pi$			$20\pi$

3. a. Convert  $\frac{\pi}{10}$  radians into degrees.

b. Convert 4 radians into degrees.

c. Convert  $10^\circ$  into radians.

d. Convert  $140^\circ$  into radians.

e. Convert  $1200^\circ$  into radians.

4. a. Find both a positive and a negative angle that are coterminal with  $140^\circ$ .  
(Answer in degrees.)
- b. Find both a positive and a negative angle that are coterminal with  $-\frac{5\pi}{8}$ .  
(Answer in radians.)
- c. Try to find a way to represent all of the (infinitely many) different angles that are coterminal with  $70^\circ$ .
- d. Try to find a way to represent all of the (infinitely many) different angles that are coterminal with  $\frac{3\pi}{5}$ .



8. What is the length of the arc spanned by the angle  $\frac{4\pi}{5}$  radians on a circle of radius 15 feet?

9. What is the length of the arc spanned by the angle  $135^\circ$  on a circle of radius 8 meters?