

Lesson 3 Practice Problems

1. C is a circle with radius r . Which of the following is true? Select **all** that apply.

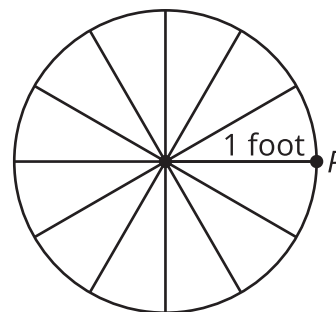
- A. The diameter of C is $2r$.
- B. The circumference of C is πr .
- C. The circumference of C is $2\pi r$.
- D. One quarter of the circle has length $\frac{\pi r}{4}$.
- E. One quarter of the circle has length $\frac{\pi r}{2}$.

2.

angle measure	rotation
0	0
$\frac{\pi}{6}$	
	$\frac{1}{8}$
	$\frac{1}{6}$
$\frac{\pi}{2}$	
$\frac{2\pi}{3}$	
	$\frac{1}{2}$
$\frac{3\pi}{2}$	
	$\frac{7}{8}$
	1

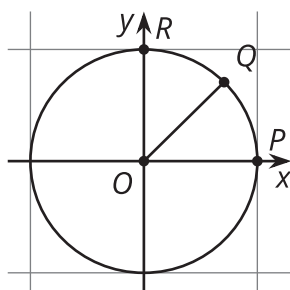
The table shows an angle measure in radians and the amount of rotation about a circle corresponding to the angle. For example, 2π radians corresponds to 1 full rotation. Complete the table.

3. A wheel has a radius of 1 foot. After the wheel has traveled a certain distance in the counterclockwise direction, the point P has returned to its original position. How many feet could the wheel have traveled? Select **all** that apply.



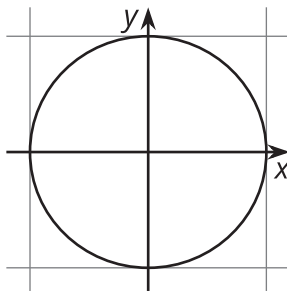
- A. $\frac{\pi}{2}$
- B. π
- C. 2π
- D. 5π
- E. 10π

4. Here are some points labeled on the unit circle:



- a. What is the measure in radians of angle POR ?
- b. Angle POQ is halfway between 0 radians and angle POR . What is the measure in radians of angle POQ ?
- c. Label point U on the circle so that the measure of angle POU is $\frac{3\pi}{4}$.
- d. Label point V on the circle so that the measure of angle POV is $\frac{3\pi}{2}$.

5. a. Mark the points on the unit circle with x -coordinate $\frac{4}{5}$.

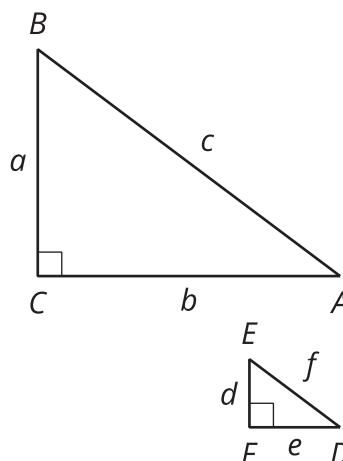


- b. What are the y -coordinates of those points? Explain how you know.

6. The point $(8, 15)$ lies on a circle centered at $(0, 0)$. Where does the circle intersect the x -axis? Where does the circle intersect the y -axis? Explain how you know.

(From Unit 6, Lesson 1.)

7. Triangles ABC and DEF are similar.
Explain why $\tan(A) = \tan(D)$.



(From Unit 6, Lesson 2.)