

## Lesson 3 Practice Problems

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

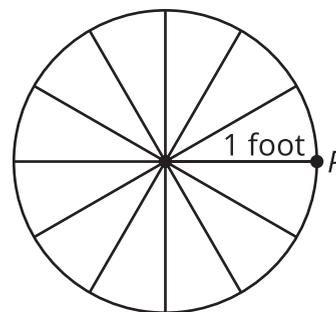
- A. The diameter of  $C$  is  $2r$ .
- B. The circumference of  $C$  is  $\pi r$ .
- C. The circumference of  $C$  is  $2\pi r$ .
- D. One quarter of the circle has length  $\frac{\pi r}{4}$ .
- E. One quarter of the circle has length  $\frac{\pi r}{2}$ .

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

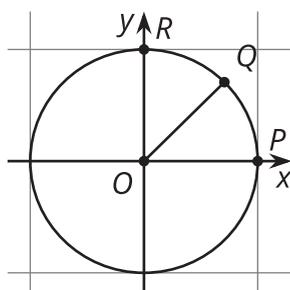
The table shows an angle measure in radians and the amount of rotation about a circle corresponding to the angle. For example,  $2\pi$  radians corresponds to 1 full rotation. Complete the table.

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.



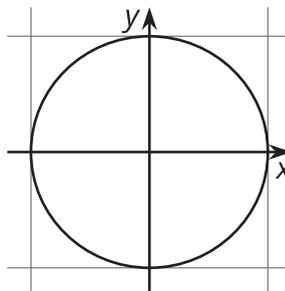
- A.  $\frac{\pi}{2}$
- B.  $\pi$
- C.  $2\pi$
- D.  $5\pi$
- E.  $10\pi$

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  $\frac{4}{5}$ .

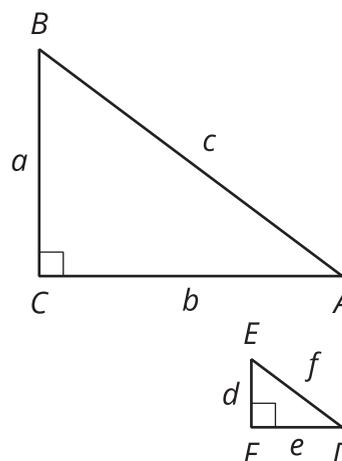


- b. What are the  $y$ -coordinates of those points? Explain how you know.

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.)