### Lesson 3 Practice Problems

1. $C$ is a circle with radius $r$. Which of the following is true? Select **all** that apply.
	1. The diameter of $C$ is $2r$.
	2. The circumference of $C$ is $πr$.
	3. The circumference of $C$ is $2πr$.
	4. One quarter of the circle has length $\frac{πr}{4}$.
	5. One quarter of the circle has length $\frac{πr}{2}$.

| 1. angle measure
 | * rotation
 |
| --- | --- |
| * 0
 | * 0
 |
| * $\frac{π}{6}$
 | *
 |
| *
 | * $\frac{1}{8}$
 |
| *
 | * $\frac{1}{6}$
 |
| * $\frac{π}{2}$
 | *
 |
| * $\frac{2π}{3}$
 | *
 |
| *
 | * $\frac{1}{2}$
 |
| * $\frac{3π}{2}$
 | *
 |
| *
 | * $\frac{7}{8}$
 |
| *
 | * 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.
1. 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.
* 
	1. $\frac{π}{2}$
	2. $π$
	3. $2π$
	4. $5π$
	5. $10π$
1. Here are some points labeled on the unit circle:
* 
	1. What is the measure in radians of angle $POR$?
	2. Angle $POQ$ is halfway between 0 radians and angle $POR$. What is the measure in radians of angle $POQ$?
	3. Label point $U$ on the circle so that the measure of angle $POU$ is $\frac{3π}{4}$.
	4. Label point $V$ on the circle so that the measure of angle $POV$ is $\frac{3π}{2}$.
	5. Mark the points on the unit circle with $x$-coordinate $\frac{4}{5}$.
	+ 
	1. What are the $y$-coordinates of those points? Explain how you know.
1. The point $\left(8,15\right)$ lies on a circle centered at $\left(0,0\right)$. 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.)
1. Triangles $ABC$ and $DEF$ are similar. Explain why $tan\left(A\right)=tan\left(D\right)$.
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* (From Unit 6, Lesson 2.)



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