Name _____ Date _____

II. Using Radians to Measure Arcs and Angles

A. Convert each radian measure to degrees.

1. $\frac{\pi}{3}$

2. $\frac{3\pi}{2}$

3. $\frac{\pi}{4}$

4. 18π

5. 0.1π

6. $\frac{4\pi}{5}$

B. Convert each degree measure to radians.

1. 100°

2. 180°

3. 30°

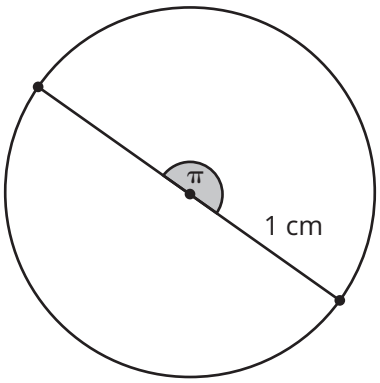
4. 540°

5. 1°

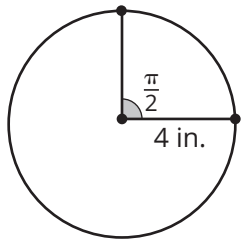
6. 345°

C. Determine each arc length.

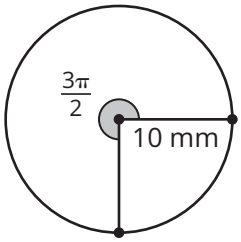
1. The radius of a circle is 1 centimeter. What is the length of an arc intercepted by an angle of π radians?



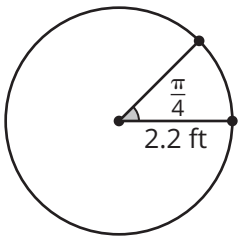
2. The radius of a circle is 4 inches. What is the length of an arc intercepted by an angle of $\frac{\pi}{2}$ radians?



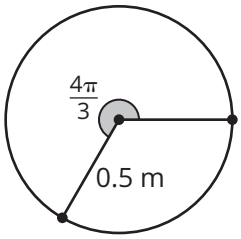
3. The radius of a circle is 10 millimeters. What is the length of an arc intercepted by an angle of $\frac{3\pi}{2}$ radians?



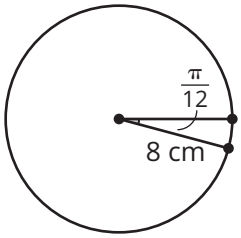
4. The radius of a circle is 2.2 feet. What is the length of an arc intercepted by an angle of $\frac{\pi}{4}$ radians?



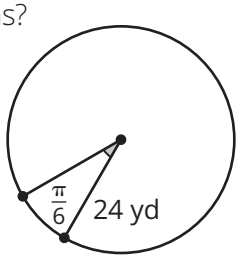
5. The radius of a circle is 0.5 meters. What is the length of an arc intercepted by an angle of $\frac{4\pi}{3}$ radians?



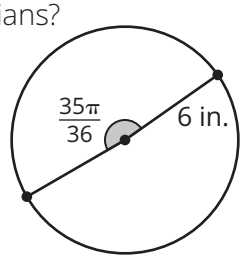
6. The radius of a circle is 8 centimeters. What is the length of an arc intercepted by an angle of $\frac{\pi}{12}$ radians?



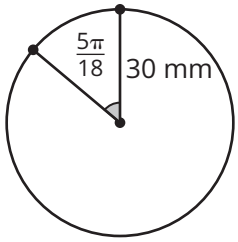
7. The radius of a circle is 24 yards. What is the length of an arc intercepted by an angle of $\frac{\pi}{6}$ radians?



8. The radius of a circle is 6 inches. What is the length of an arc intercepted by an angle of $\frac{35\pi}{36}$ radians?



9. The radius of a circle is 30 millimeters. What is the length of an arc intercepted by an angle of $\frac{5\pi}{18}$ radians?



10. The radius of a circle is 15 feet. What is the length of an arc intercepted by an angle of $\frac{49\pi}{36}$ radians?