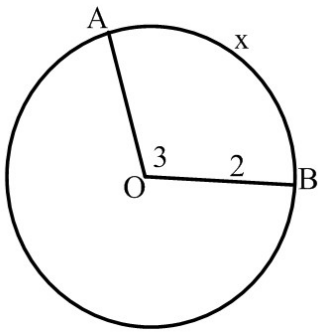
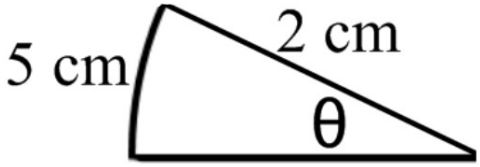
Name _____ Date _____
Mr. Schlansky Geometry

Central Angles, Arc Lengths, and Radii

1. In circle O, the measure of central angle AOB is 3 radians and the length of $\overline{OB}$ is 2 cm. What is the measure of arc AB?



2. What is the measure of the central angle below?



3. What is the measure of the radius of a sector whose arc length is 12 inches and has a central angle of 4 radians?

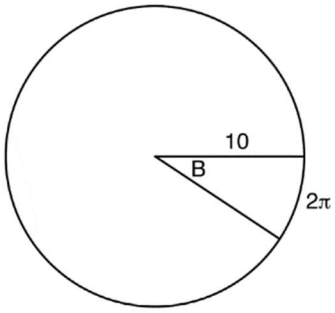
4. A wheel has a radius of 18 inches. Which distance, to the *nearest inch*, does the wheel travel when it rotates through an angle of $\frac{2\pi}{5}$ radians?

5. What is the measure of a central angle in degrees whose arc length is 6 meters and whose radius measures 8 meters?

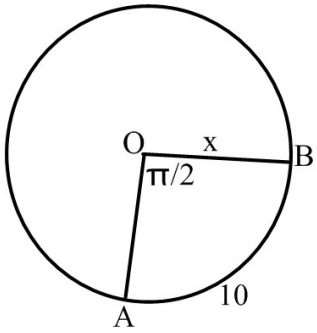
6. In the diagram below, the circle shown has radius 10. Angle *B* intercepts an arc with a length of 2π.

What is the measure of angle *B*, in radians?

1) $10 + 2\pi$
2) 20π
3) $\frac{\pi}{5}$
4) $\frac{5}{\pi}$



7. In circle O, the measure of central angle AOB is $\frac{\pi}{2}$ radians and the length of arc AB is 10 cm. What is the measure of radius $\overline{OB}$ to the *nearest tenth of a cm*?



8. In the diagram below, Circle 1 has radius 4, while Circle 2 has radius 6.5. Angle *A* intercepts an arc of length π, and angle *B* intercepts an arc of length $\frac{13\pi}{8}$.

Dominic thinks that angles *A* and *B* have the same radian measure. State whether Dominic is correct or not. Explain why.