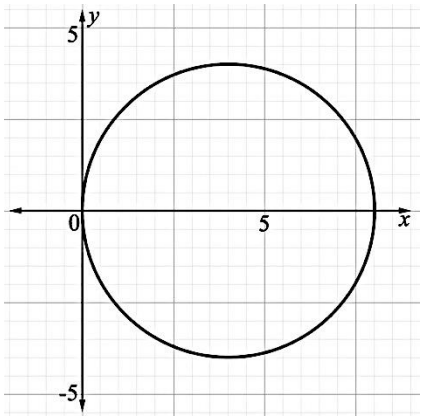
Date Completed: _____
Mentor Initials: _____

Properties of Circles

.

Multiple Choice

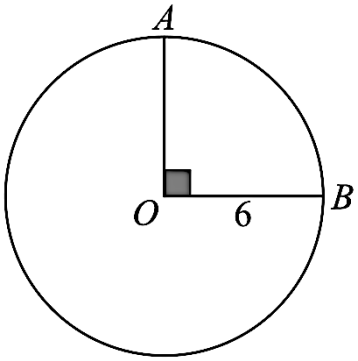
1.



The center of the above circle is located at the point (4,0). What is the circumference of the circle?

A) 8
B) 16
C) 8π
D) 16π

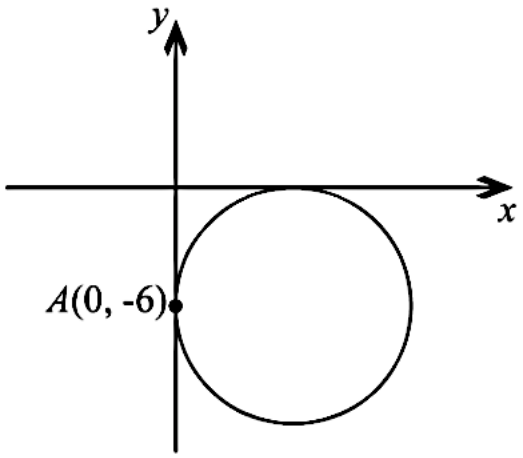
2.



The circle above with center O has a radius of 6. What is the length of minor arc $\widehat{AB}$?

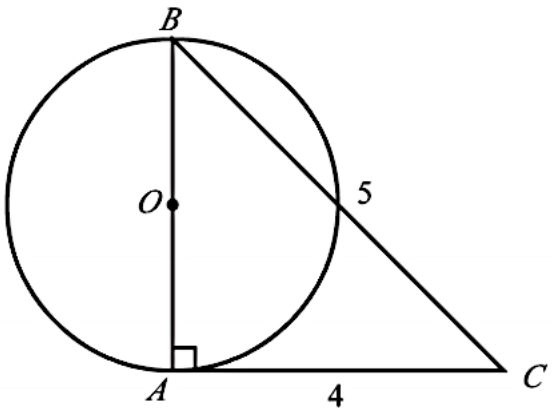
A) 3π
B) 6π
C) 12π
D) 36π

3. In the xy-coordinate plane below, the circle is tangent to the x-axis and tangent to the y-axis at point A. What is the area of the circle?



A) 6π
B) 9π
C) 12π
D) 36π

4. In the the figure below, $\overline{AB}$ is a diameter of the circle with center O. If $\overline{AC} = 4$ and $\overline{BC} = 5$, what is the circumference of the circle?



A) $\frac{3\pi}{2}$
B) 3π
C) 4π
D) 6π

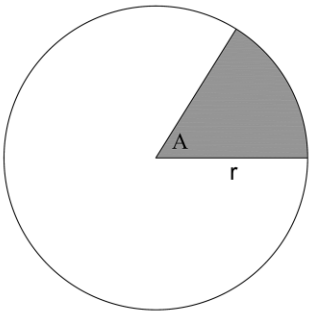
5. Rectangle $ABCD$ is inscribed in a circle and has a width of 6 and a length of 8. What is the circumference of the circle?

A) 6π
B) 10π
C) 36π
D) 100π

6. The diameter of a circle is 13.5 cm. What is the area of the circle?

A) 6.75π cm^2
B) 13.5π cm^2
C) 45.6π cm^2
D) 182.3π cm^2

7.



Point A is the center of the circle above. If $\angle A$ measures $\frac{7\pi}{18}$ radians, what fraction of the area of the circle is the area of the shaded region?

A) $\frac{7}{36}$

B) $\frac{7}{18}$

C) $\frac{7}{28}$

D) $\frac{7}{42}$

8. In the xy-plane, a circle is centered at the origin, and point $(-5, 12)$ lies on the circle. What is the area of the circle?

A) 13π
B) 26π
C) 169π
D) 676π

9. What is the area of a circle with a circumference of π?

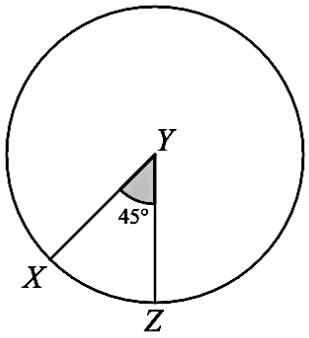
A) $\frac{1}{4}\pi$

B) $\frac{1}{2}\pi$

C) π

D) 2π

10.



If the circle above with center Y has a circumference of 24, what is the arc length of XZ?

A) 3

B) 6

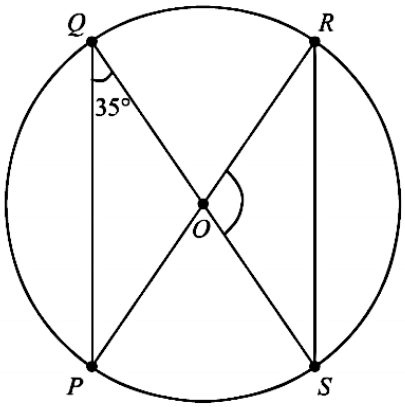
C) 8

D) 12

Grid-In

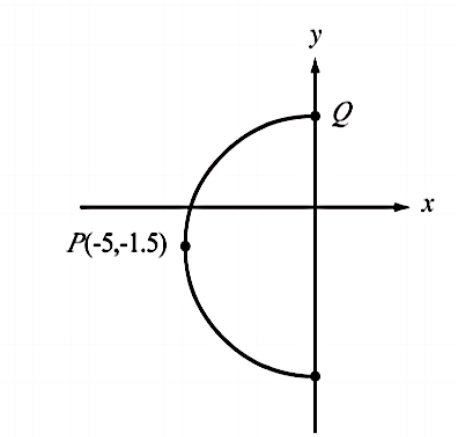
11. A circle with center $(3, -2)$ is tangent to the y-axis. What is the radius of the circle?

12. In the figure below, $\overline{PR}$ and $\overline{QS}$ are diameters of circle O, and the measure of $\angle PQS$ is 35°. What is the measure of $\angle ROS$, in degrees?

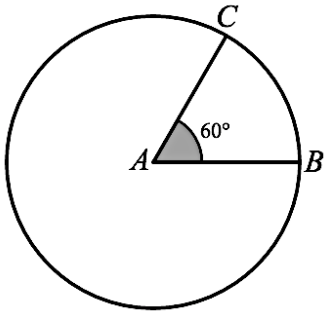


13. Points A and B lie on a circle with radius 9, and arc $\widehat{AB}$ has length of 6π. What fraction of the circumference of the circle is the length of arc $\widehat{AB}$?

14. On the semicircle below, point P is the point with the smallest x-coordinate. What is the y-coordinate of point Q?



15.



The circle shown has a circumference of 84π. The length of minor arc $\widehat{CB}$ is $x\pi$. What is the value of x ?