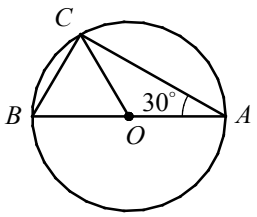
Chapter 19 Practice Test

1



In the figure above, O is the center of the circle and $\overline{AB}$ is a diameter. If the length of $\overline{AC}$ is $4\sqrt{3}$ and $m\angle BAC = 30$, what is the area of circle O?

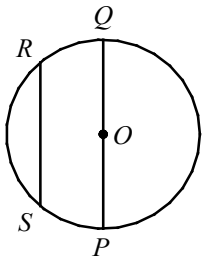
A) 12π

B) 16π

C) 18π

D) 24π

2



In the circle above, chord $\overline{RS}$ is parallel to diameter $\overline{PQ}$. If the length of $\overline{RS}$ is $\frac{3}{4}$ of the length of $\overline{PQ}$ and the distance between the chord and the diameter is $2\sqrt{7}$, what is the radius of the circle?

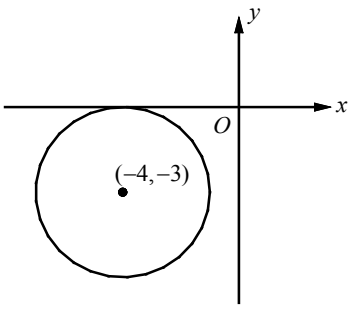
A) 6

B) $3\sqrt{7}$

C) 8

D) $4\sqrt{7}$

3



In the figure above, the circle is tangent to the x-axis and has center $(-4,-3)$. Which of the following equations represents the equation of the circle shown in the xy-plane above?

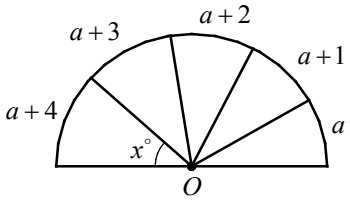
A) $(x+4)^2+(y+3)^2=9$

B) $(x-4)^2+(y-3)^2=9$

C) $(x+4)^2+(y+3)^2=3$

D) $(x-4)^2+(y-3)^2=3$

4



The figure above shows a semicircle with the lengths of the adjacent arcs a, $a+1$, $a+2$, $a+3$, and $a+4$. If the value of x is 42, what is the value of a?

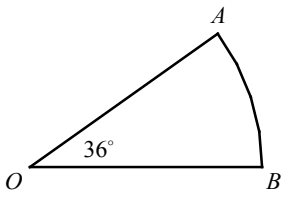
A) 7

B) 8

C) 9

D) 10

5



In the figure above, the length of arc $\overset{\frown}{AB}$ is π. What is the area of sector OAB?

A) 2π

B) $\frac{5}{2}\pi$

C) 3π

D) $\frac{7}{2}\pi$

6

$$x^2 - 4x + y^2 - 6x - 17 = 0$$

What is the area of the circle in the xy- plane above?

A) 20π

B) 24π

C) 26π

D) 30π

7

Which of the following is the equation of a circle that has a diameter of 8 units and is tangent to the graph of $y = 2$?

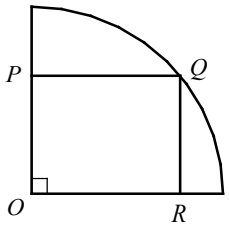
A) $(x+1)^2 + (y+2)^2 = 16$

B) $(x-1)^2 + (y-2)^2 = 16$

C) $(x+2)^2 + (y+1)^2 = 16$

D) $(x-2)^2 + (y-1)^2 = 16$

8



In the figure above, rectangle $OPQR$ is inscribed in a quarter circle that has a radius of 9. If $PQ = 7$, what is the area of rectangle $OPQR$?

A) $24\sqrt{2}$

B) $26\sqrt{2}$

C) $28\sqrt{2}$

D) $30\sqrt{2}$

9

In a circle with center O, the central angle has a measure of $\frac{2\pi}{3}$ radians. The area of the sector formed by central angle AOB is what fraction of the area of the circle?

10

A wheel with a radius of 2.2 feet is turning at a constant rate of 400 revolutions per minute on a road. If the wheel traveled $k\pi$ miles in one hour what is the value of k? (1 mile = 5,280 feet)