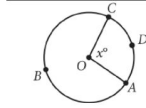


SAT Math

Circles 3

Question # ID
3.1 c8345903



The circle above has center O , the length of arc \widehat{ADC} is 5π , and $x = 100$. What is the length of arc \widehat{ABC} ?

- A. 9π
- B. 13π
- C. 18π
- D. $\frac{13}{2}\pi$

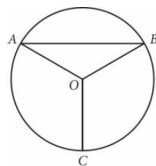
3.2 2266984b

$$x^2 + 20x + y^2 + 16y = -20$$

The equation above defines a circle in the xy -plane. What are the coordinates of the center of the circle?

- A. $(-20, -16)$
- B. $(-10, -8)$
- C. $(10, 8)$
- D. $(20, 16)$

3.3 69b0d79d



Point O is the center of the circle above, and the measure of $\angle OAB$ is 30° .

If the length of \overline{OC} is 18, what is the length of arc \widehat{AB} ?

- A. 9π
- B. 12π
- C. 15π
- D. 18π

SAT Math

Circles 3

Question # ID

3.4 ab176ad6

The equation $(x+6)^2 + (y+3)^2 = 121$ defines a circle in the xy -plane. What is the radius of the circle?

3.5 3e577e4a

A circle in the xy -plane has its center at $(-4, -6)$. Line k is tangent to this circle at the point $(-7, -7)$. What is the slope of line k ?

A. -3

B. $-\frac{1}{3}$

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

D. 3

3.6 9e44284b

In the xy -plane, the graph of $2x^2 - 6x + 2y^2 + 2y = 45$ is a circle. What is the radius of the circle?

A. 5

B. 6.5

C. $\sqrt{40}$

D. $\sqrt{50}$

3.7 ca2235f6

A circle has center O , and points A and B lie on the circle. The measure of arc AB is 45° and the length of arc AB is 3 inches. What is the circumference, in inches, of the circle?

A. 3

B. 6

C. 9

D. 24

SAT Math

Circles 3

Question # ID

3.8 981275d2

$$(x-6)^2 + (y+5)^2 = 16$$

In the xy -plane, the graph of the equation above is a circle. Point P is on the circle and has coordinates $(10, -5)$. If \overline{PQ} is a diameter of the circle, what are the coordinates of point Q ?

- A. $(2, -5)$
- B. $(6, -1)$
- C. $(6, -5)$
- D. $(6, -9)$

3.9 89661424

A circle in the xy -plane has its center at $(-5, 2)$ and has a radius of 9. An equation of this circle is $x^2 + y^2 + ax + by + c = 0$, where a , b , and c are constants. What is the value of c ?

3.10 fb58c0db

Points A and B lie on a circle with radius 1, and arc \widehat{AB} has length $\frac{\pi}{3}$. What fraction of the circumference of the circle is the length of arc \widehat{AB} ?

3.11 acd30391

A circle in the xy -plane has equation $(x+3)^2 + (y-1)^2 = 25$. Which of the following points does NOT lie in the interior of the circle?

- A. $(-7, 3)$
- B. $(-3, 1)$
- C. $(0, 0)$
- D. $(3, 2)$

3.12 b8a225ff

Circle A in the xy -plane has the equation $(x+5)^2 + (y-5)^2 = 4$. Circle B has the same center as circle A. The radius of circle B is two times the radius of circle A. The equation defining circle B in the xy -plane is $(x+5)^2 + (y-5)^2 = k$, where k is a constant. What is the value of k ?

SAT Math

Circles 3

Question # ID

3.13 249d3f80

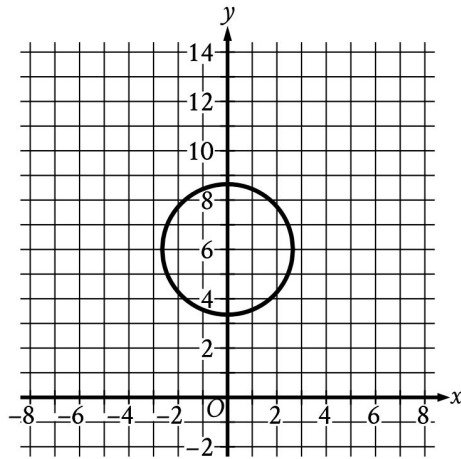
Point O is the center of a circle. The measure of arc RS on this circle is 100° . What is the measure, in degrees, of its associated angle ROS ?

3.14 abcd0007

$$8x^2 + 112px + 8y^2 - 64py = -448p^2$$

In the xy -plane, the graph of the given equation is a circle. The length of the radius of the circle is np , where n and p are positive constants. What is the value of n ?

3.15 1b2b20b9



Circle A shown is defined by the equation $x^2 + (y - 6)^2 = 7$. Circle B (not shown) has the same radius but is translated 96 units to the right. If the equation of circle B is $(x - h)^2 + (y - k)^2 = a$, where h , k , and a are constants, what is the value of $4a$?

3.16 2855cb58

A circle in the xy -plane has its center at $(16, 17)$ and has a radius of $7k$. Which equation represents this circle?

- A. $(x - 16)^2 + (y - 17)^2 = 49k$
- B. $(x - 16)^2 + (y - 17)^2 = 49k^2$
- C. $(x - 16)^2 + (y - 17)^2 = 7k$
- D. $(x - 16)^2 + (y - 17)^2 = 7k^2$

SAT Math

Circles 3

Question # ID

3.17 fa2771d5

Circle A has equation $(x - 7)^2 + (y + 3)^2 = 1$. In the xy -plane, circle B is obtained by translating circle A to the right 4 units. Which equation represents circle B?

- A. $(x - 7)^2 + (y + 7)^2 = 1$
- B. $(x - 3)^2 + (y + 3)^2 = 1$
- C. $(x - 11)^2 + (y + 3)^2 = 1$
- D. $(x - 7)^2 + (y - 1)^2 = 1$

3.18 35d37640

Point F lies on a unit circle in the xy -plane and has coordinates $(1, 0)$. Point G is the center of the circle and has coordinates $(0, 0)$. Point H also lies on the circle and has coordinates $(-1, y)$, where y is a constant. Which of the following could be the positive measure of angle FGH , in radians?

- A. $\frac{27\pi}{2}$
- B. $\frac{29\pi}{2}$
- C. 24π
- D. 25π