

Question ID e8a6c1fc

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

ID: e8a6c1fc

What is the value of $\tan \frac{92\pi}{3}$?

- A. $-\sqrt{3}$
- B. $-\frac{\sqrt{3}}{3}$
- C. $\frac{\sqrt{3}}{3}$
- D. $\sqrt{3}$

Question ID 9f2728be

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

ID: 9f2728be

The graph of $x^2 + x + y^2 + y = \frac{199}{2}$ in the xy -plane is a circle. What is the length of the circle's radius?

Question ID fde10025

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

ID: fde10025

A circle in the xy -plane has its center at $(-1, 1)$. Line t is tangent to this circle at the point $(5, -4)$. Which of the following points also lies on line t ?

- A. $(0, \frac{6}{5})$
- B. $(4, 7)$
- C. $(10, 2)$
- D. $(11, 1)$

Question ID 32f6a450

Assessment	Test	Domain	Skill	Difficulty
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ID: 32f6a450

What is the diameter of the circle in the xy -plane with equation $(x - 5)^2 + (y - 3)^2 = 16$?

- A. 4
- B. 8
- C. 16
- D. 32

Question ID b006acd3

Assessment	Test	Domain	Skill	Difficulty
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ID: b006acd3

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. $(x - 7)^2 + (y - 1)^2 = 1$

Question ID 82372955

Assessment	Test	Domain	Skill	Difficulty
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ID: 82372955

In the xy -plane, a circle has center C with coordinates (h, k) . Points A and B lie on the circle. Point A has coordinates $(h + 1, k + \sqrt{102})$, and $\angle ACB$ is a right angle. What is the length of $\overline{AB}$?

- A. $\sqrt{206}$
- B. $2\sqrt{102}$
- C. $103\sqrt{2}$
- D. $103\sqrt{3}$

Question ID 40789a56

Assessment	Test	Domain	Skill	Difficulty
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ID: 40789a56

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 ?

Question ID 409da8a2

Assessment	Test	Domain	Skill	Difficulty
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ID: 409da8a2

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. $(x - 16)^2 + (y - 17)^2 = 7k^2$

Question ID 33be0f76

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

ID: 33be0f76

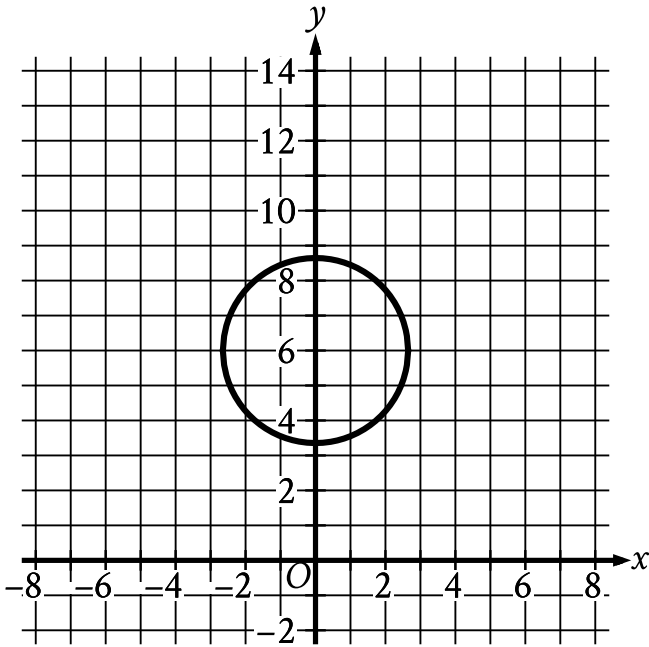
The equation $x^2 + (y - 2)^2 = 36$ represents circle A. Circle B is obtained by shifting circle A down 4 units in the xy-plane. Which of the following equations represents circle B?

- A. $x^2 + (y + 2)^2 = 36$
- B. $x^2 + (y - 6)^2 = 36$
- C. $(x - 4)^2 + (y - 2)^2 = 36$
- D. $(x + 4)^2 + (y - 2)^2 = 36$

Question ID 13df6820

Assessment	Test	Domain	Skill	Difficulty
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ID: 13df6820



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 $4a$?

Question ID fd77ca64

Assessment	Test	Domain	Skill	Difficulty
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ID: fd77ca64

$$x^2 + 14x + y^2 = 6y + 109$$

In the xy -plane, the graph of the given equation is a circle. What is the length of the circle's radius?

- A. $\sqrt{109}$
- B. $\sqrt{149}$
- C. $\sqrt{167}$
- D. $\sqrt{341}$

Question ID ea7fd37b

Assessment	Test	Domain	Skill	Difficulty
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ID: ea7fd37b

$$(x + 4)^2 + (y - 19)^2 = 121$$

The graph of the given equation is a circle in the xy -plane. The point (a, b) lies on the circle. Which of the following is a possible value for a ?

- A. -16
- B. -14
- C. 11
- D. 19

Question ID fb2d9203

Assessment	Test	Domain	Skill	Difficulty
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ID: fb2d9203

Points Q and R lie on a circle with center P . The radius of this circle is 9 inches. Triangle PQR has a perimeter of 31 inches. What is the length, in inches, of $\overline{QR}$?

- A. $13\sqrt{2}$
- B. 13
- C. $9\sqrt{2}$
- D. 9

Question ID b2aa5d73

Assessment	Test	Domain	Skill	Difficulty
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ID: b2aa5d73

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 ?

Question ID 34eb7da8

Assessment	Test	Domain	Skill	Difficulty
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ID: 34eb7da8

The equation $x^2 + (y - 1)^2 = 49$ represents circle A. Circle B is obtained by shifting circle A down **2** units in the xy-plane. Which of the following equations represents circle B?

- A. $(x - 2)^2 + (y - 1)^2 = 49$
- B. $x^2 + (y - 3)^2 = 49$
- C. $(x + 2)^2 + (y - 1)^2 = 49$
- D. $x^2 + (y + 1)^2 = 49$

Question ID 8d56e2be

Assessment	Test	Domain	Skill	Difficulty
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ID: 8d56e2be

A circle has center O , and points R and S lie on the circle. In triangle ORS , the measure of $\angle ROS$ is 88° . What is the measure of $\angle RSO$, in degrees? (Disregard the degree symbol when entering your answer.)

Question ID ff2ced2c

Assessment	Test	Domain	Skill	Difficulty
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ID: ff2ced2c

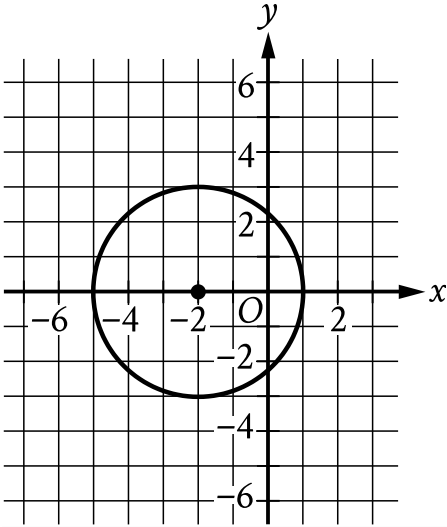
Which of the following equations represents a circle in the xy -plane that intersects the y -axis at exactly one point?

- A. $(x - 8)^2 + (y - 8)^2 = 16$
- B. $(x - 8)^2 + (y - 4)^2 = 16$
- C. $(x - 4)^2 + (y - 9)^2 = 16$
- D. $x^2 + (y - 9)^2 = 16$

Question ID 834ac03f

Assessment	Test	Domain	Skill	Difficulty
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ID: 834ac03f



Circle A (shown) is defined by the equation $(x + 2)^2 + y^2 = 9$. Circle B (not shown) is the result of shifting circle A down 6 units and increasing the radius so that the radius of circle B is 2 times the radius of circle A . Which equation defines circle B ?

- A. $(x + 2)^2 + (y + 6)^2 = (4)(9)$
- B. $2(x + 2)^2 + 2(y + 6)^2 = 9$
- C. $(x + 2)^2 + (y - 6)^2 = (4)(9)$
- D. $2(x + 2)^2 + 2(y - 6)^2 = 9$

Question ID 3e05efb1

Assessment	Test	Domain	Skill	Difficulty
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ID: 3e05efb1

A circle has center G , and points M and N lie on the circle. Line segments MH and NH are tangent to the circle at points M and N , respectively. If the radius of the circle is **168** millimeters and the perimeter of quadrilateral $GMHN$ is **3,856** millimeters, what is the distance, in millimeters, between points G and H ?

- A. **168**
- B. **1,752**
- C. **1,760**
- D. **1,768**

Question ID db84ccdc

Assessment	Test	Domain	Skill	Difficulty
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ID: db84ccdc

A circle in the xy -plane has a diameter with endpoints $(2, 4)$ and $(2, 14)$. An equation of this circle is $(x - 2)^2 + (y - 9)^2 = r^2$, where r is a positive constant. What is the value of r ?

Question ID 9ca6e7b4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

ID: 9ca6e7b4

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

Question ID 3a95868c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

ID: 3a95868c

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 ?

Question ID ddb62d63

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

ID: ddb62d63

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

Question ID 55b41004

Assessment	Test	Domain	Skill	Difficulty
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ID: 55b41004

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

Question ID 9bf2678d

Assessment	Test	Domain	Skill	Difficulty
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ID: 9bf2678d

What is the value of $\sin 42\pi$?

- A. 0
- B. $\frac{1}{2}$
- C. $\frac{\sqrt{2}}{2}$
- D. 1