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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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. msup $+(y+7)^2=1$

B. msup $+(y+3)^2=1$

C. msup $+(y+3)^2=1$

D. msup $+(y-1)^2=1$

Question ID 82372955

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

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 $\left(h+1, k+\sqrt{102}\right)$, 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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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. $x^2 +$ msup $= 36$

B. $x^2 +$ msup $= 36$

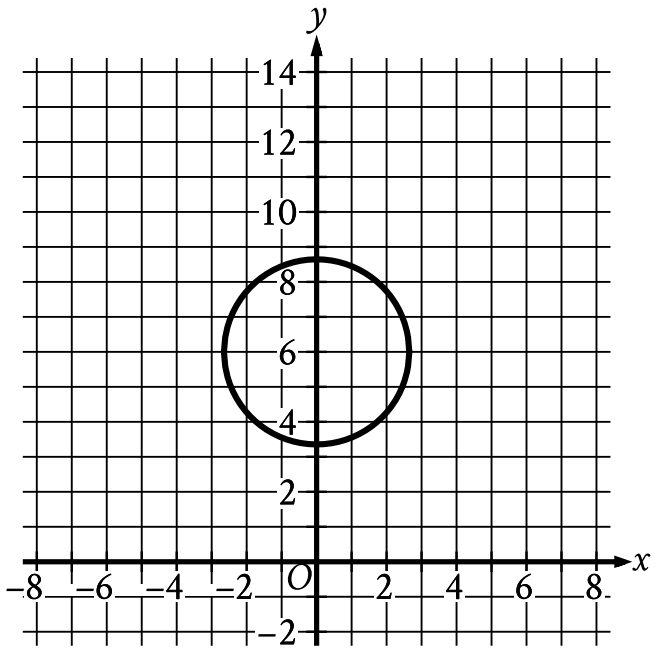
C. msup $+ (y - 2)^2 = 36$

D. msup $+ (y - 2)^2 = 36$

Question ID 13df6820

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

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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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 8d56e2be

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

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 34eb7da8

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

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. msup $+ (y - 1)^2 = 49$

B. $x^2 +$ msup $= 49$

C. msup $+ (y - 1)^2 = 49$

D. $x^2 +$ msup $= 49$

Question ID ff2ced2c

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

ID: ff2ced2c

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

A. msup $+ (y-8)^2 = 16$

B. msup $+ (y-4)^2 = 16$

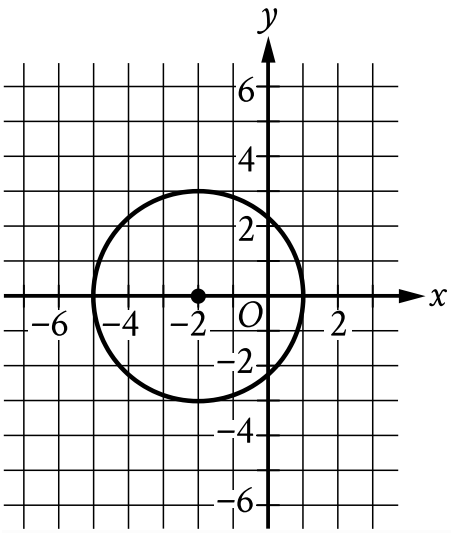
C. msup $+ (y-9)^2 = 16$

D. $x^2 +$ msup $= 16$

Question ID 834ac03f

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

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. msup $+(y+6)^2=(4)(9)$

B. 2msup $+2(y+6)^2=9$

C. msup $+(y-6)^2=(4)(9)$

D. 2msup $+2(y-6)^2=9$

Question ID 3e05efb1

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

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
SAT	Math	Geometry and Trigonometry	Circles	Hard

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 9bf2678d

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

ID: 9bf2678d

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

A. 0

B. $\frac{1}{2}$

C. $\frac{\sqrt{2}}{2}$

D. 1

Question ID 55b41004

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

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