

P'PLEUM

ID: e8a6c1fc

~~A. $-\sqrt{3}$~~

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

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

D. $\sqrt{3}$

$\tan\left(\frac{92(180)}{3}\right) = -\sqrt{3} //$

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?

$$\begin{aligned} \left(x + \frac{1}{2}\right)^2 + \left(y + \frac{1}{2}\right)^2 &= \frac{199}{2} + \left(\frac{1}{2}\right)^2 + \left(\frac{1}{2}\right)^2 \\ &= 100 // \\ r^2 &= 10 \\ r &= 10, -10 // \end{aligned}$$

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

$$r^2 = 16$$
$$r = 4, \text{ } -4$$
$$2r = 8 //$$

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

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

~~C. $(x - 11)^2 + (y + 3)^2 = 1$~~

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

Center A = (7, -3)
Center B = (11, -3)
 ↓
 7 + 4

Question ID 82372955

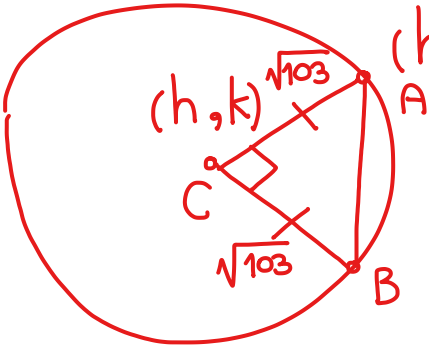
Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

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 $(h + 1, k + \sqrt{102})$, and $\angle ACB$ is a right angle. What is the length of $\overline{AB}$?

~~X~~ $\sqrt{206}$

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



$(h+1, k+\sqrt{102})$
A
then $h = 0$
 $k = 0$
 $A = (1, \sqrt{102})$
 $C = (0, 0)$
 $AC = \sqrt{1^2 + \sqrt{102}^2}$
 $= \sqrt{103}$
 $CB = \sqrt{103}$
 $AB = \sqrt{2} \sqrt{103}$
 $= \sqrt{206} //$

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 ?

$$\begin{aligned}r_A &= 2 \rightarrow r_B = 2r_A \\r_B &= 4 \\k &= 4^2 = 16\end{aligned}$$

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?

~~X~~. $x^2 + (y + 2)^2 = 36$

B. $x^2 + (y - 6)^2 = 36$

C. $(x - 4)^2 + (y - 2)^2 = 36$

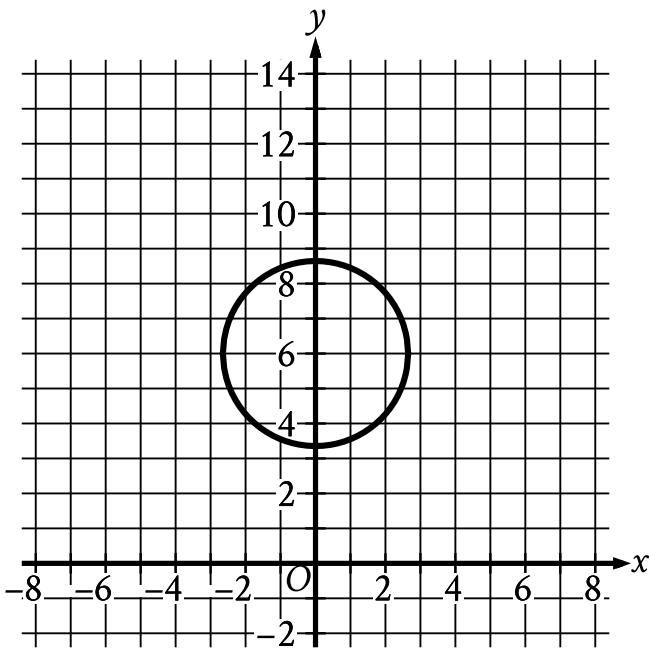
D. $(x + 4)^2 + (y - 2)^2 = 36$

Center A = (0, 2)
Center B = (0, -2)
 ↓
 2 - 4

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 $4a$?

$$a = 7$$
$$4a = 28 //$$

Center A = $(0, -6)$
Center B = $(46, -6)$
$$(x - 46)^2 + (y + 6)^2 = 7 \leftarrow \text{ans}$$

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. $\sqrt{341}$

$$\begin{aligned}x^2 + 14x + y^2 - 6y &= 109 \\(x + 7)^2 + (y^2 - 6y + 9) &= 109 + 7^2 + 3^2 \\&= 167 \\r^2 &= 167 \\r &= \sqrt{167}, -\sqrt{167} \\\end{aligned}$$

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 ~~X~~
- ~~B. -14~~
- C. 11 ~~X~~
- D. 19 ~~X~~

Center = $(-4, 19)$

$r = 11$

$-4 - 11 \leq x \leq -4 + 11$

$-15 \leq x \leq 7$

$19 - 11 \leq y \leq 19 + 11$

$8 \leq y \leq 30$ 6622

Question ID fb2d9203

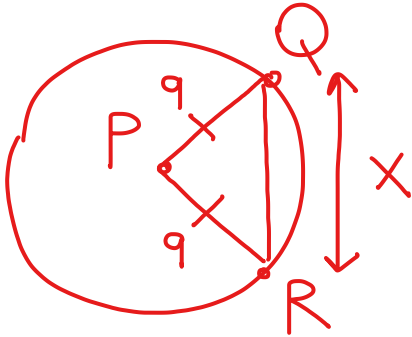
Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	Hard

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 QR ?

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

โจทย์ไม่ได้บอก
QPR = right angle



$9 + 9 + x = 31$
 $x = 13 //$

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

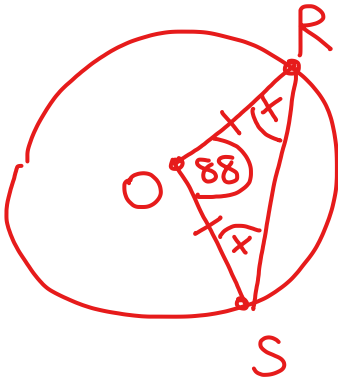
Center A = (0, 1)
Center B = (0, -1)
↓
1-2

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.)



$$88 + x + x = 180$$
$$x = 46 //$$

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. $(x - 8)^2 + (y - 8)^2 = 16$ ✗

B. $(x - 8)^2 + (y - 4)^2 = 16$ ✗

~~C.~~ $(x - 4)^2 + (y - 9)^2 = 16$

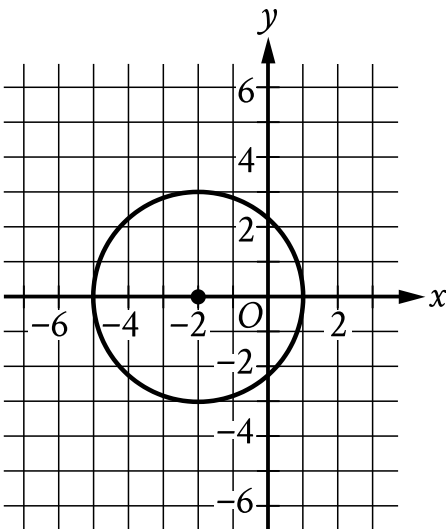
D. $x^2 + (y - 9)^2 = 16$ ✗

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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.~~ $(x + 2)^2 + (y + 6)^2 = (4)(9)$
 B. $2(x + 2)^2 + 2(y + 6)^2 = 9$
 C. $(x + 2)^2 + (y \times 6)^2 = (4)(9)$
 D. $2(x + 2)^2 + 2(y \times 6)^2 = 9$

$$r_A = 3 \quad r_B = 2r_A$$

$$r_{\beta} = 6$$

Center A = $(-2, 0)$

Center $B = (-2, -6)$

0-6

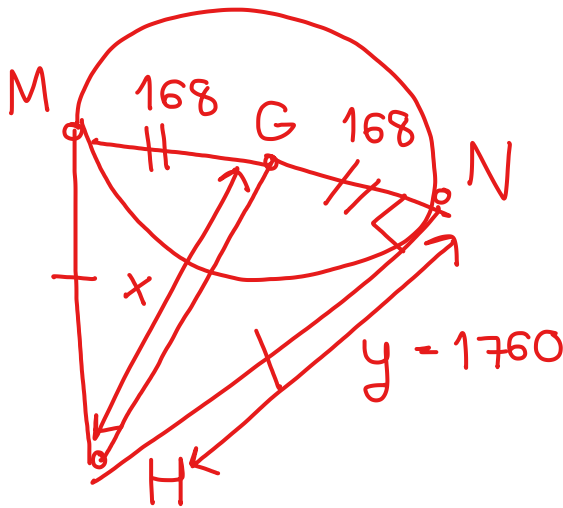
Question ID 3e05efb1

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
- ~~X. 1,768~~



$$\begin{aligned} 2(168) + 2y &= 3,856 \\ y &= 1,760 \\ x &= \sqrt{168^2 + 1,760^2} \\ &= 1,768 \end{aligned}$$

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 ?

$$\begin{aligned} 2r &= \sqrt{0^2 + (-10)^2} \\ 2r &= 10 \\ r &= 5 // \end{aligned}$$

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 ?

100 //

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. $\frac{27\pi}{2}$

$13.5\pi \rightarrow 12\pi + 3\pi$

270°

B. $\frac{29\pi}{2}$

$14.5\pi \rightarrow 14\pi + \pi$

90°

C. 24π

$24\pi \rightarrow 0^\circ, 360^\circ$

~~D. 25π~~

~~$24\pi + \pi$~~

~~180°~~

$$FGH = \pi = 180^\circ$$
$$\pi + \pi$$

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

Question ID 9bf2678d

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

ID: 9bf2678d

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

- X

0

B.

$\frac{1}{2}$

C.

$\frac{\sqrt{2}}{2}$

D.

1
- $\sin (42 \times 180) = 0 //$