

Geometry · Equation of a Circle · Test

Common Core G-GPE.A.1 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This 45-minute test has 9 questions worth 20 points. It covers the equation of a circle, finding the center and radius, completing the square, and locating points relative to a circle. Calculators are allowed. Show all work and leave radicals exact.

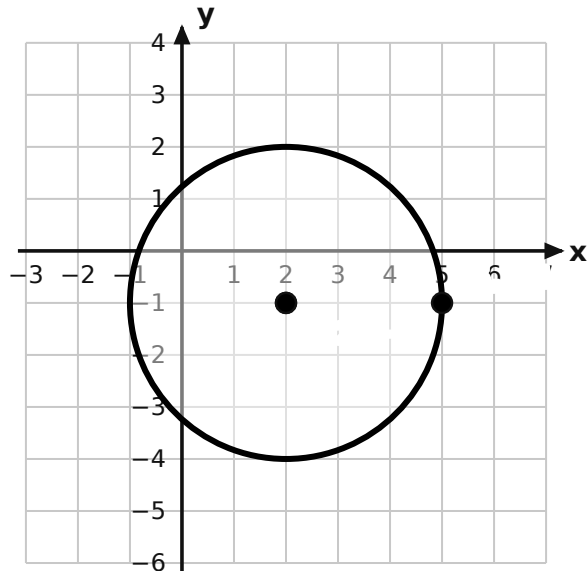
Test information

- **Grade:** Geometry
- **Chapter:** Equation of a Circle
- **Common Core:** G-GPE.A.1
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 3 pts; Question 5: 3 pts; Question 6: 2 pts; Question 7: 2 pts; Question 8: 2 pts; Question 9: 2 pts)

Question 1: Write the equation (2 points)

Write the equation of the circle with center $(-4,3)$ and radius 6.

Question 2: Equation from a graph (2 points)



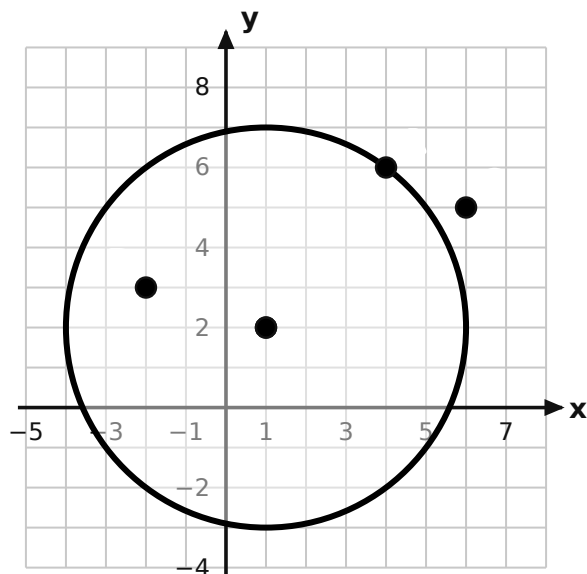
A circle on a coordinate grid.

Write the equation of the circle shown. The center is at a lattice point, and the circle passes through (5, -1).

Question 3: Center and radius (2 points)

Find the center and the exact radius of the circle $(x+3)^2+(y-7)^2=50$.

Question 4: Points and a circle (3 points)



Circle with points A, B and C.

The circle $(x-1)^2+(y-2)^2=25$ is shown. Decide whether each point is inside, on, or outside the

circle. Show the calculation. $A(4,6)$, $B(-2,3)$, $C(6,5)$.

Question 5: Complete the square (3 points)

The equation of a circle is $x^2+y^2-4x+10y+13=0$. Rewrite it in standard form, and state the center and the radius.

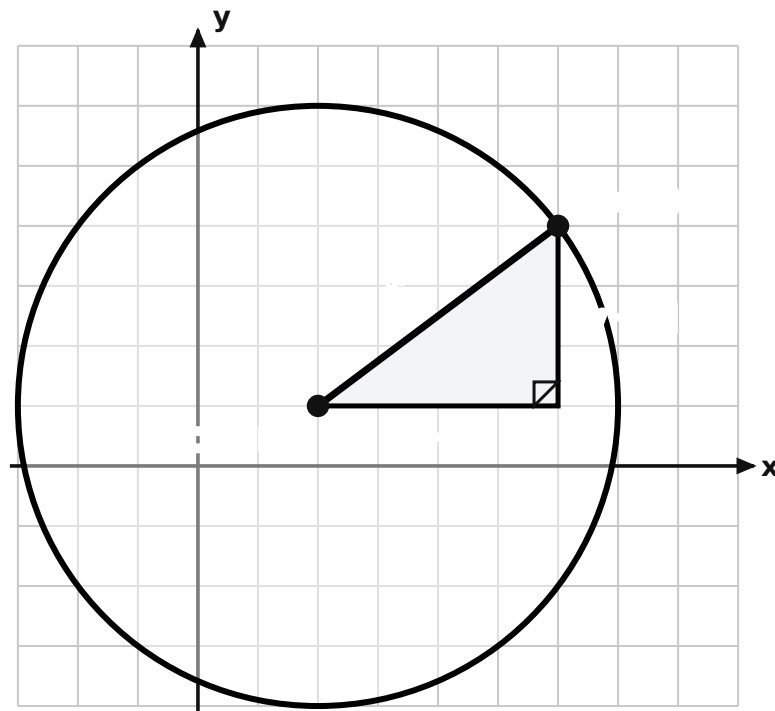
Question 6: Diameter endpoints (2 points)

A circle has a diameter with endpoints $(-3,-2)$ and $(5,4)$. Write the equation of the circle.

Question 7: Tangent circle (2 points)

A circle has center $(6,-4)$ and is tangent to the x-axis. Write its equation.

Question 8: Derive the equation (2 points)



A point $P(x, y)$ on a circle with center $C(h, k)$.

The circle shown has center (h, k) and radius r . Use the right triangle to show that every point (x, y) on the circle satisfies the circle equation.

Question 9: Points on a circle (2 points)

The point $(5, y)$ lies on the circle $x^2+y^2=169$. Find all possible values of y .