

Geometry - Equations of Circles and Parabolas - Test

Common Core G-GPE.A.1, G-GPE.A.2 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 45-minute test checks equations of circles and parabolas. It has 9 questions worth 20 points in total. Show every step of the work, label diagrams, and include units where they apply. Calculators are allowed unless the teacher says otherwise.

About this test

- Grade: Geometry
- Chapter: Equations of Circles and Parabolas
- Standards: G-GPE.A.1, G-GPE.A.2
- Time: 45 minutes
- Total: 20 points

Question 1 - Write an equation [2 pts]

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

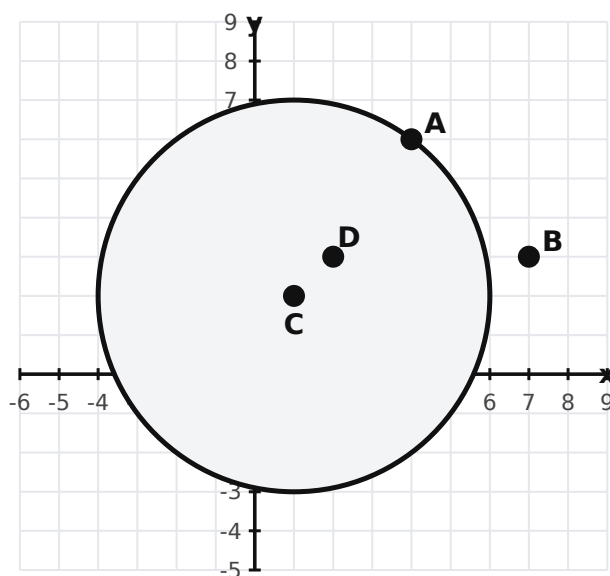
Question 2 - Center and radius [2 pts]

Find the center and radius of the circle $(x+7)^2+(y-4)^2=64$.

Question 3 - Complete the square [3 pts]

- Rewrite $x^2+y^2+6x-10y+18=0$ in center-radius form. (1 point)
- State the center. (1 point)
- State the radius. (1 point)

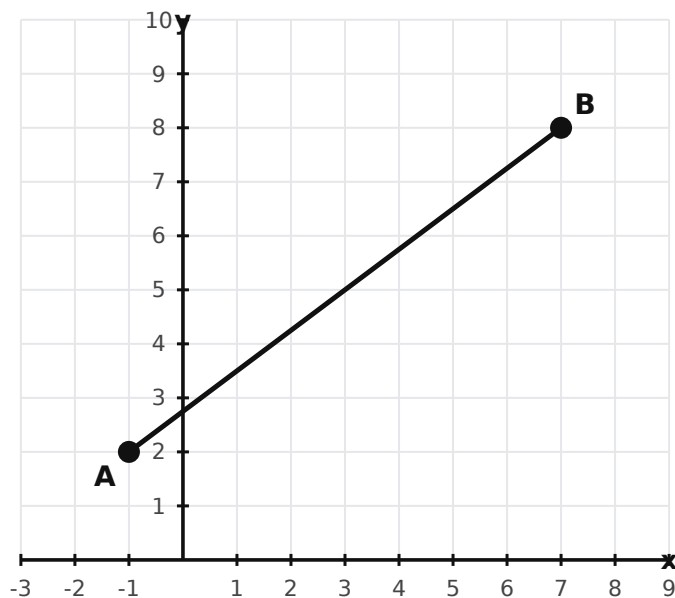
Question 4 - Point and circle [2 pts]



Circle with center C.

Circle C has equation $(x-1)^2 + (y-2)^2 = 25$. Decide whether (2, 3), (4, 6) and (7, 3) are inside, on, or outside it.

Question 5 - Circle from a diameter [2 pts]



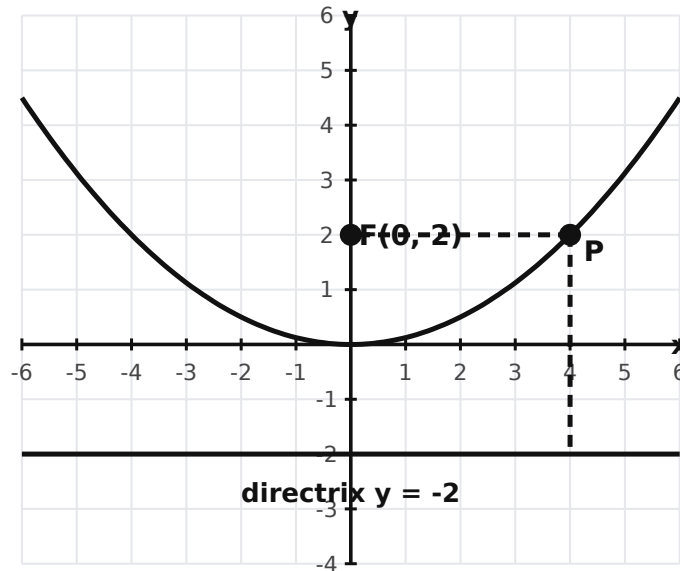
AB is a diameter.

The endpoints of a diameter of a circle are (-1, 2) and (7, 8). Write the equation of the circle.

Question 6 - Line meets circle [2 pts]

Find the points where the line $y = 2x$ meets the circle $x^2 + y^2 = 20$.

Question 7 - Parabola [3 pts]



Parabola with focus and directrix.

A parabola has focus $(0, 2)$ and directrix $y = -2$. (a) Write its equation. (b) Show that $(4, 2)$ is on it. (c) Find the distance from $(4, 2)$ to the directrix.

Question 8 - Tangent circle [2 pts]

A circle has center $(5, -4)$ and is tangent to the y -axis. Write its equation.

Question 9 - Fire tower [2 pts]

A fire tower at $(0, 0)$ can see 15 miles in every direction. Is a fire at $(9, 12)$ visible? Is a fire at $(12, 10)$ visible?