

Algebra 2 - Systems of Linear and Quadratic Equations - Test

Common Core A-REI.C.7 · maths-pdf.fr/en/

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

This 45-minute test on systems of linear and quadratic equations has 9 questions worth 20 points in total. The questions move from direct skills to multi-step problems. Show your work, because partial credit is given for a correct setup and sound reasoning.

About this test

- Grade: Algebra 2
- Chapter: Systems of Linear and Quadratic Equations
- Standards: A-REI.C.7
- Time: 45 minutes
- Total: 20 points

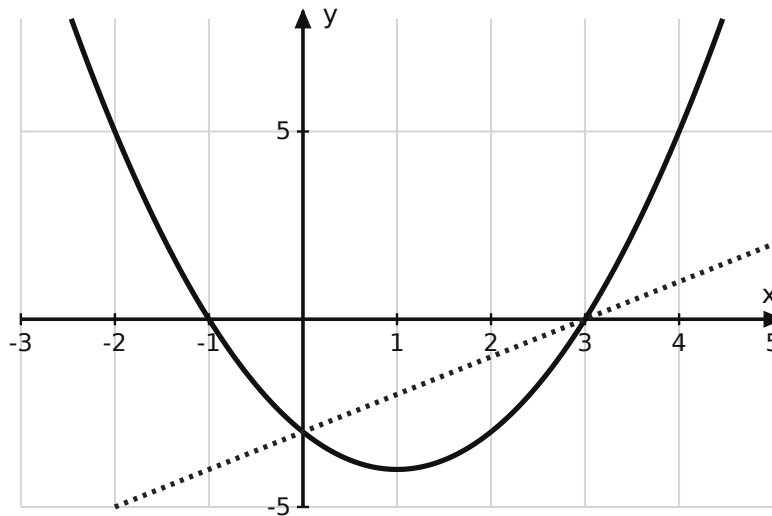
Question 1 - Check a solution [2 pts]

Determine whether $(3,2)$ is a solution of $y = x^2 - 4x + 5$ and $y = x - 1$.

Question 2 - Substitution [3 pts]

Solve the system $y = x^2 + x - 4$ and $y = x + 1$. That is a quadratic and a linear equation.

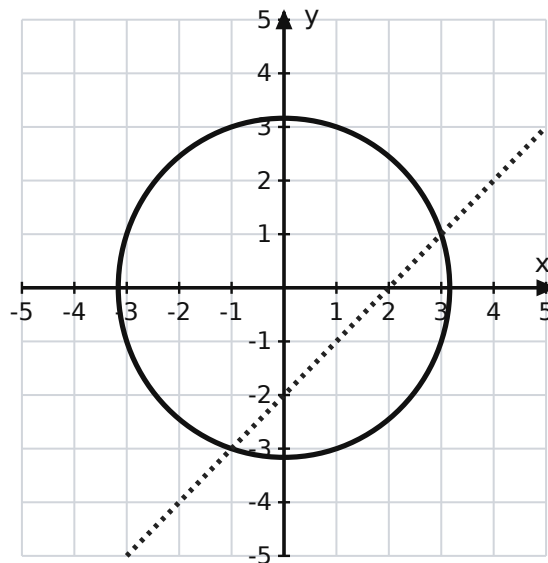
Question 3 - Graph and algebra [3 pts]



Parabola and line.

The parabola $y = x^2 - 2x - 3$ and the line $y = x - 3$ are graphed. Find both intersection points algebraically.

Question 4 - Circle and line [2 pts]

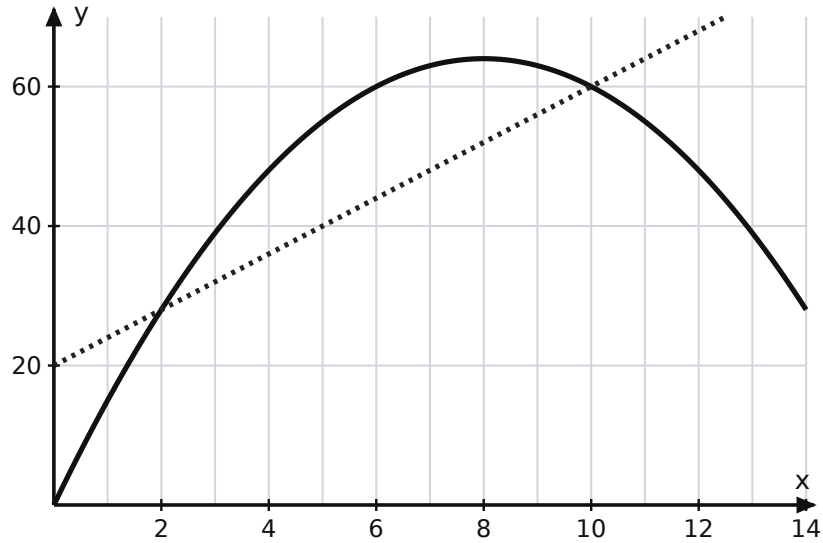


Circle and line.

Solve $x^2 + y^2 = 10$ and $y = x - 2$.

Question 5 - Number of intersections [2 pts]

For which values of k does the line $y = k$ meet the parabola $y = x^2 - 4$ in two points?

Question 6 - Break-even [2 pts]

Revenue and cost.

A fundraiser has revenue $R = -x^2 + 16x$ and cost $C = 4x + 20$ (in tens of dollars). Find the break-even values of x .

Question 7 - Two numbers [2 pts]

Two numbers have a difference of 4 and a product of 45. Find all pairs of numbers.

Question 8 - Tangent line [2 pts]

Show that the line $y = 4x - 4$ is tangent to $y = x^2$.

Question 9 - Find the error [2 pts]

Maya solved $y = x^2 - 1$ and $y = 3$ and wrote only $x = 2$. Find the complete solution set.