

Algebra 2 - Solving Quadratic Equations - Test

Common Core A-REI.B.4a, A-REI.B.4b · maths-pdf.fr/en/

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

This 45-minute test on solving 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: Solving Quadratic Equations
- Standards: A-REI.B.4a, A-REI.B.4b
- Time: 45 minutes
- Total: 20 points

Question 1 - Square roots [2 pts]

Solve $3(x+2)^2 = 48$.

Question 2 - Factoring [2 pts]

Solve $3x^2 - 11x - 4 = 0$ by factoring.

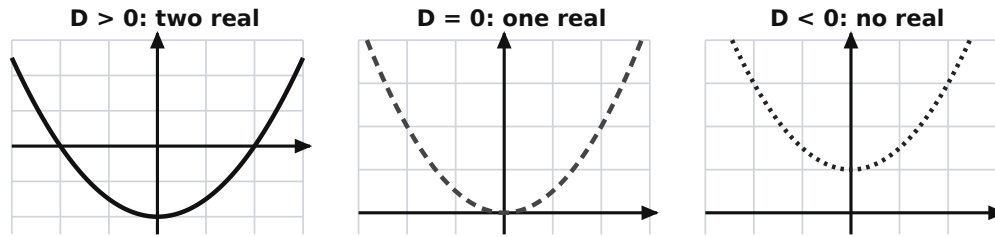
Question 3 - Complete the square [3 pts]

Solve $x^2 - 10x + 4 = 0$ by completing the square. Leave irrational answers in radical form.

Question 4 - Quadratic formula [3 pts]

Solve $2x^2 - 3x - 4 = 0$ with the quadratic formula. Give exact answers.

Question 5 - Number of solutions [2 pts]



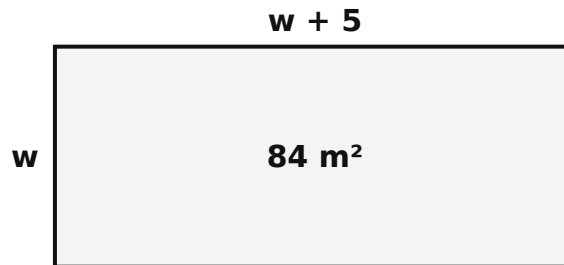
The sign of the discriminant tells how many times the parabola meets the x-axis.

The graphs of $y = x^2 - 4$, $y = x^2$, and $y = x^2 + 2$ are shown in some order. Without solving, state the discriminant sign and the number of real solutions when each function equals 0.

Question 6 - Complex solutions [2 pts]

Solve $x^2 + 4x + 8 = 0$.

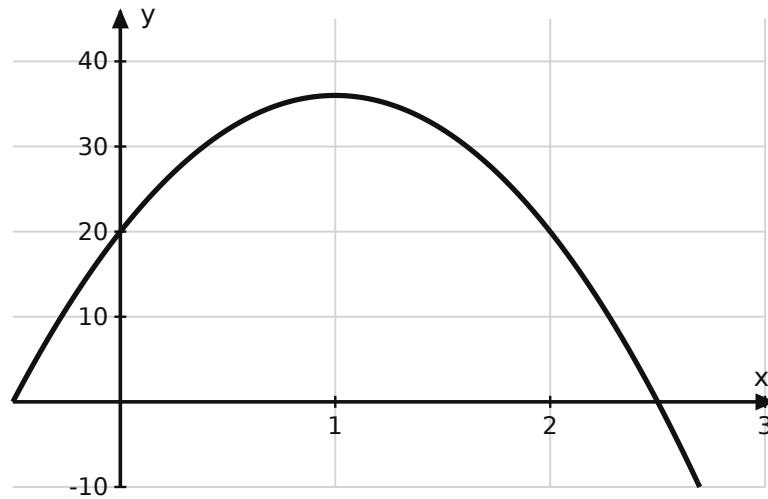
Question 7 - Rectangle [2 pts]



Rectangle with area 84 square meters.

A rectangular patio is 5 meters longer than it is wide, and its area is 84 square meters. Find its dimensions.

Question 8 - Falling object [2 pts]



$$h(t) = -16t^2 + 32t + 20.$$

An object's height is $h(t) = -16t^2 + 32t + 20$ feet. When does it reach the ground? Give the exact value.

Question 9 - Find the parameter [2 pts]

For what values of k does $x^2 - 6x + k = 0$ have two real solutions?