

Solving Quadratic Equations: math test, Grade 9 – download the PDF

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Square root method

/ 3 pts

Solve.

a. $2x^2 - 50 = 0$

b. $(x + 2)^2 = 20$ (exact answers, then nearest hundredth)

2 Completing the square

/ 4 pts

Solve by completing the square.

a. $x^2 - 12x + 20 = 0$

b. $3x^2 + 6x - 1 = 0$

3 Quadratic formula and discriminant

/ 4 pts

Calculators are allowed.

a. Solve $2x^2 - 7x + 3 = 0$ with the quadratic formula.

b. How many real solutions does $x^2 - 8x + 17 = 0$ have? Justify.

4 A parameter

/ 3 pts

Find the value of k for which $x^2 - 10x + k = 0$ has exactly one solution, then give that solution.

5 A poster

/ 3 pts

A rectangular poster is 6 inches longer than it is wide, and its area is 187 square inches. Find its dimensions.

6 Line and parabola

/ 3 pts

Solve the system $y = x^2 - 1$ and $y = x + 1$.



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