

QUADRATIC EQUATIONS – 2. QUADRATIC FORMULA & DISCRIMINANTS

Name:

Date:

Please remember to show/communicate all your work. You DO NOT need to answer every question, two correct answers at any level will demonstrate a student's level of attainment.

LEGEND						
✓	M	x	S	N	G	H
correct	mostly correct	incorrect	silly mistake	did not know how to start or skipped	with group	got help

	Mild (🌶️🌶️)		Medium (🌶️🌶️🌶️)		Spicy (🌶️🌶️🌶️🌶️)
Questions	#1	#2	#3	#4	#5
Results					

1. Find the zeroes of the following equations using the quadratic formula.

(a) $4x^2 + x - 1 = 0$

(b) $-2x^2 - 2x + 4 = 0$

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2. State the discriminant of $6x^2 - 2x + k = 0$. For which values of k would the result be two different real solutions.

3. If $y = -6x + b$ determine the value for 'b' that allows the quadratic equation $y = -2x^2 + 6x - 3$ to intersect at exactly one point.

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4. Using the digits 0 to 9 (with no duplicates), fill in the boxes to make the statements true. Explain some of the steps you took to solving, your initial thoughts/attempts, and include any rough work to help show your thinking.

$$y_1 = \square x^2 + \square x + \square \text{ has no real roots.}$$

$$y_2 = \square x^2 + \square x + \square \text{ has one real (two identical) root.}$$

$$y_3 = \square x^2 + \square x + \square \text{ two real roots.}$$

5. Determine the points of intersection of the quadratic relations:

$$y = x^2 + 2x - 8 \text{ \& } y = -4(x + 2)(x - 4).$$