

QUADRATIC FUNCTIONS – 1. GRAPHING

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	✗	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					

- Write the equations for the parabola $y = x^2$ that undergoes the following transformations:
 - reflected over the x-axis, translated 5 units left and 2 units down, and compressed vertically by a factor of $1/2$ (use vertex form).
 - has a vertex of (0,6), horizontal compressions by a factor of 5 (use standard form).

- Write an equation for a parabola that has a y-intercept of 24 and the distance between the x-intercepts is 10. Explain some of the steps you took to solving, your initial thoughts/ attempts, and include any rough work to help show your thinking.

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3. Complete the table below (use the space below to clearly show any steps you took to solve a feature)

feature	$y = (x - 4)^2 - 1$	$y = -3x^2 - 6x + 9$
vertex		
domain		
range		
x-intercepts		
y-intercept		
axis of symmetry		
any congruent equation		

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4. Graph and complete the table (use the space below to clearly show any steps you took to solve a feature)

graph		
vertex	(4,-9)	
domain	$x \in \mathbb{R}$	$x \in \mathbb{R}$
range		$y \leq 2$
axis of symmetry		$x = 1$
x-intercept(s)		0 & 2
y-intercept	-5	
min/max	min -9	
graphs' equation		

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5. Using the integers -9 to 9, at most one time each, place values into each box to create a three corresponding statements. Explain some of the steps you took to solving, your initial thoughts/attempts, and include any rough work to help show your thinking.

$$y = \square x^2 + \square x + \square$$

$$\text{roots: } x = \square, x = \square$$

$$\text{range: } y \geq \square$$

$$\text{ex: } y = 1x^2 + 6x + 5$$

$$\text{roots: } x = -5, x = -1$$

$$\text{range: } y \geq -4$$