

QUADRATIC FUNCTIONS – 2. COMPLETING THE SQUARE

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. Complete the squares:

(a) $y = x^2 - 8x + 7$

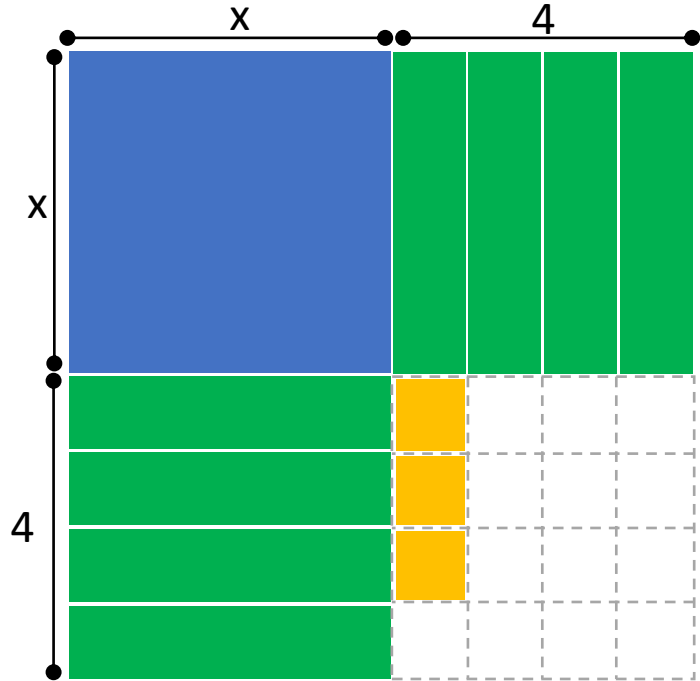
(b) $y = -2x^2 + 7x + 1$

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2. Determine a set of values needed for A to E to complete the square and the equations below. Using the diagram explain where some of values come from and how they relate.

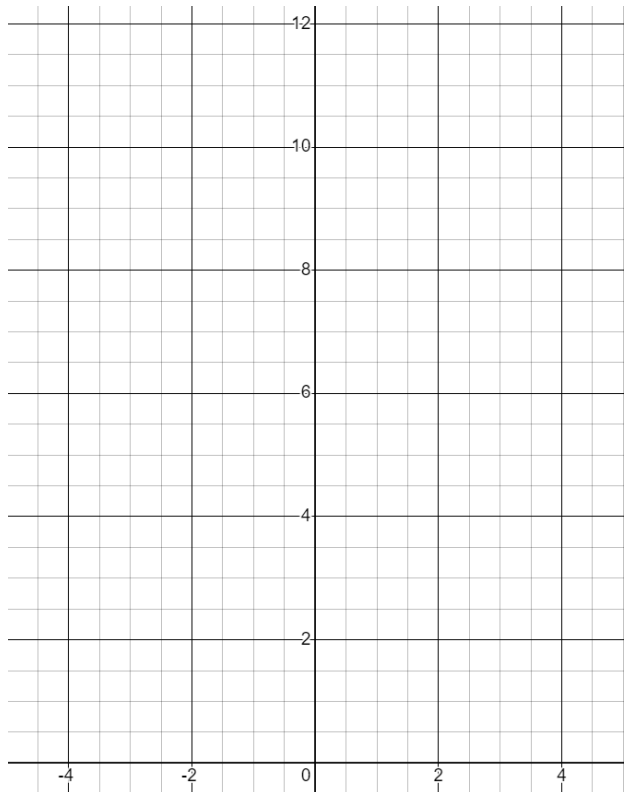
$$y = Ax^2 + Bx + C$$

$$y = (x + D)^2 - E$$



3. Graph the following quadratic equation by first completing the square:

$$y = -2x^2 + 6x + 7.$$



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4. To complete the square for $y = x^2 + \square x - 4$ the vertex of the parabola has been shifted down 13 units from the x-axis. Determine the vertex form of this equation and the value for \square . Explain some of the steps you took to solving, your initial thoughts/attempts, and include any rough work to help show your thinking.

5. Using the digits 1 to 9 at most one time each, place digits in each box to make a true statement. Explain some of the steps you took to solving, your initial thoughts/attempts, and include any rough work to help show your thinking.

$$(x - \square)^2 - \square = x^2 - \square x + \square = (x - \square)(x - \square)$$