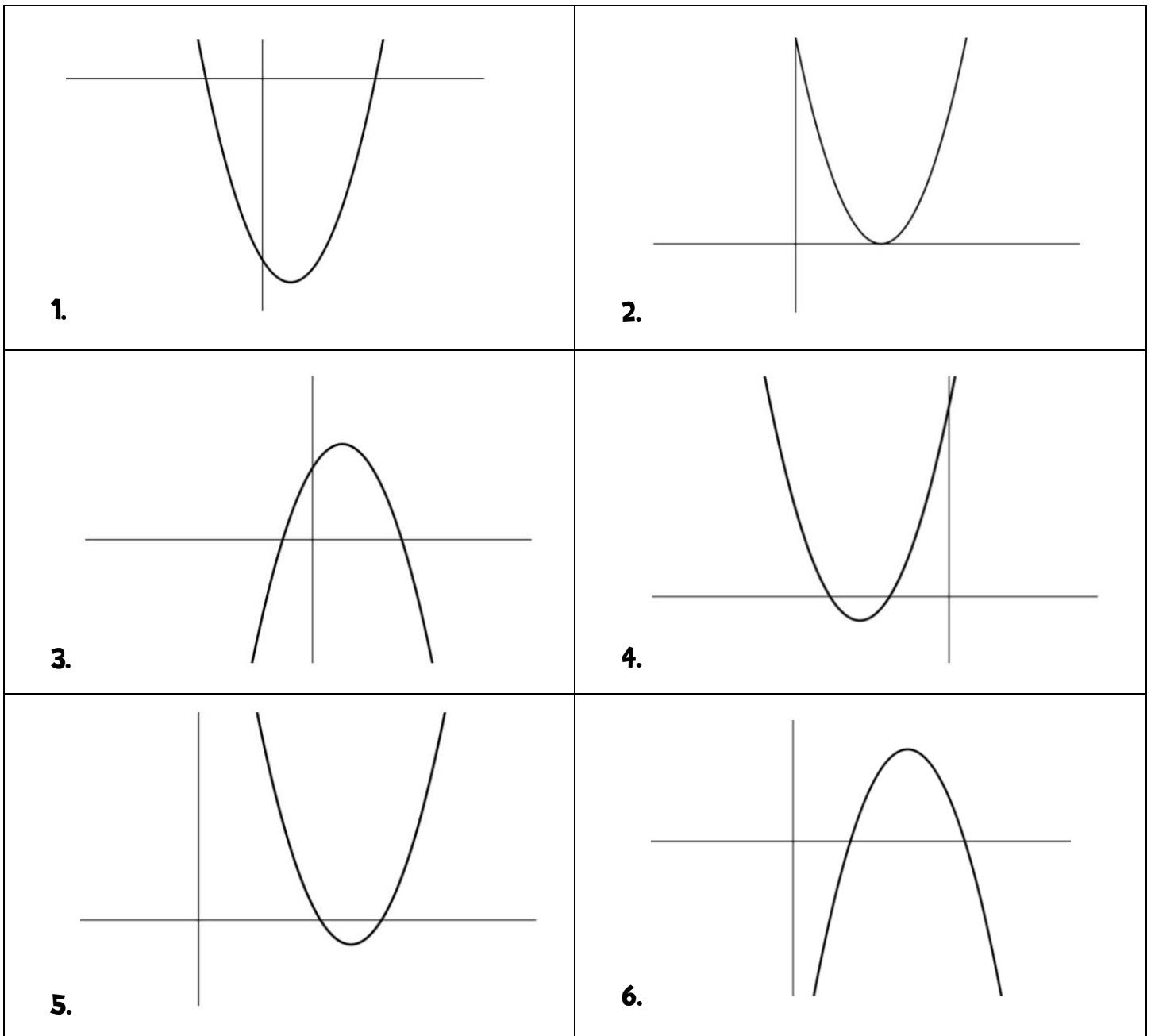


Investigation: Quadratic Function Forms

A <table border="1" style="margin-left: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-3</td><td>-12</td></tr> <tr><td>-2</td><td>-5</td></tr> <tr><td>-1</td><td>0</td></tr> <tr><td>0</td><td>3</td></tr> <tr><td>1</td><td>4</td></tr> <tr><td>2</td><td>3</td></tr> <tr><td>3</td><td>0</td></tr> </tbody> </table>	x	y	-3	-12	-2	-5	-1	0	0	3	1	4	2	3	3	0	B <table border="1" style="margin-left: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-3</td><td>-1</td></tr> <tr><td>-2</td><td>0</td></tr> <tr><td>-1</td><td>3</td></tr> <tr><td>0</td><td>8</td></tr> <tr><td>1</td><td>15</td></tr> <tr><td>2</td><td>24</td></tr> <tr><td>3</td><td>35</td></tr> </tbody> </table>	x	y	-3	-1	-2	0	-1	3	0	8	1	15	2	24	3	35	C <table border="1" style="margin-left: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-3</td><td>36</td></tr> <tr><td>-2</td><td>25</td></tr> <tr><td>-1</td><td>16</td></tr> <tr><td>0</td><td>9</td></tr> <tr><td>1</td><td>4</td></tr> <tr><td>2</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </tbody> </table>	x	y	-3	36	-2	25	-1	16	0	9	1	4	2	1	3	0
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G $y = (x - 3)(x - 3)$	H $y = (x + 2)(x + 4)$	I $y = -(x + 1)(x - 3)$																																																
J $y = -(x - 2)(x - 6)$	K $y = (x - 4)(x + 2)$	L $y = (x - 4)(x - 6)$																																																
M $y = -x^2 + 8x - 12$	N $y = x^2 - 6x + 9$	O $y = x^2 + 6x + 8$																																																
P $y = x^2 - 10x + 24$	Q $y = -x^2 + 2x + 3$	R $y = x^2 - 2x - 8$																																																
S $y = (x - 5)^2 - 1$	T $y = -(x - 4)^2 + 4$	U $y = (x - 1)^2 - 9$																																																
V $y = -(x - 1)^2 + 4$	W $y = (x + 3)^2 - 1$	X $y = (x - 3)^2$																																																



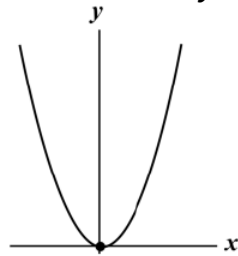
Graph	Table	Intercept Form	Standard Form	Vertex Form
1				
2				
3				
4				
5				
6				

Match each graph to its corresponding table, intercept form, standard form, and vertex form equations. Record your responses in the table provided.

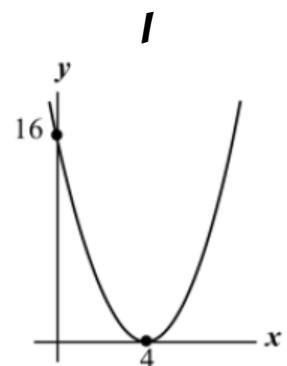
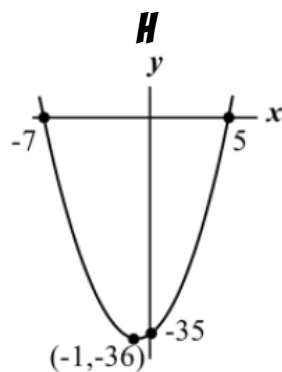
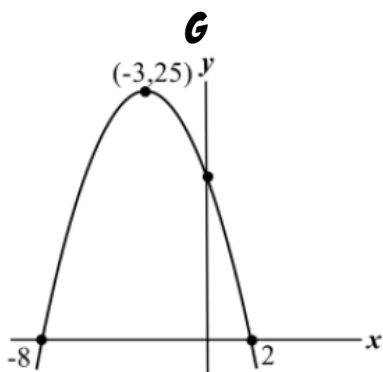
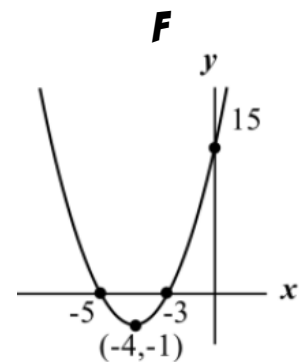
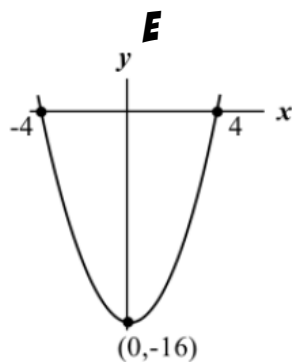
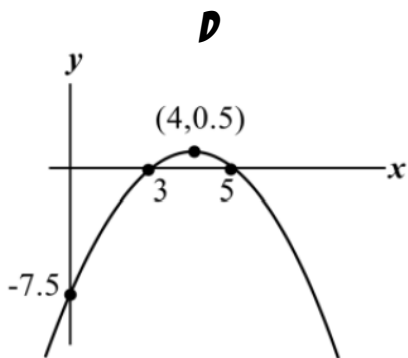
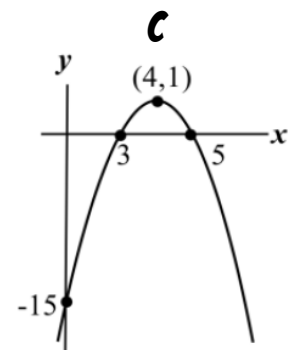
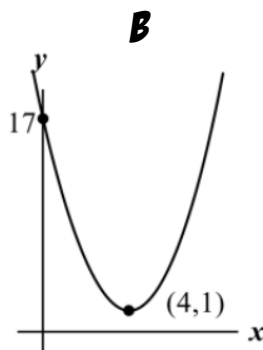
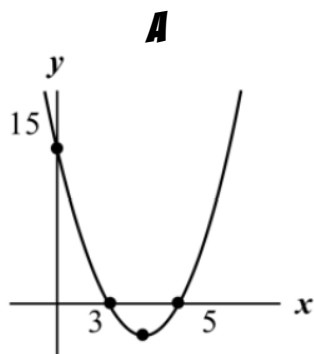
MATCHING – PART 2

- Refer to the bottom of page 3 in your notes packet where you identified the features of six quadratic functions.
- Match each function to its graph. Record your responses in the table provided.
- Some graphs will NOT be used.

PARENT FUNCTION: $y = x^2$



THE GRAPHS:



- After you have matched the graph to its corresponding quadratic function equation, use the additional features of the graph and write the function in its equivalent function forms. *Use the provided a value.*

	Graph	a	Standard Form $y = ax^2 + bx + c$	Vertex Form $y = a(x - h)^2 + k$	Intercept Form $y = a(x - p)(x - q)$
7		1	$y = x^2 + 2x - 35$		
8		1	$y = x^2 + 8x$ _____	$y = (x + 4)^2 - 1$	
9		1	$y = x^2 - 8x$ _____		$y = (x - 4)(x - 4)$
10		-1	$y = -x^2 + 8x - 15$	$y = -(x - 4)^2 + 1$	
11		-1	$y = -x^2 - 6x + 16$		
12		$-\frac{1}{2}$	$y = -\frac{1}{2}x^2 + 4x$ _____		$y = -\frac{1}{2}(x - 3)(x - 5)$

CLOSURE

Here are four equations of quadratic functions and four sketches of the graphs of quadratic function. Match the equation to its graph. Then determine the coordinates of P , Q , R , and S .

A. $y = x^2 - 6x + 8$

B. $y = (x - 6)(x + 8)$

C. $y = (x - 6)^2 + 8$

D. $y = -(x + 8)(x - 6)$

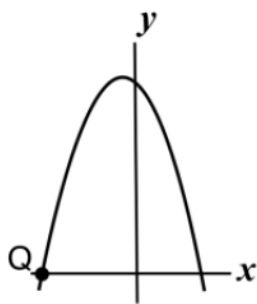
13



Graph: _____

Coordinates of P : _____

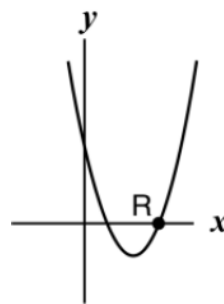
14



Graph: _____

Coordinates of Q : _____

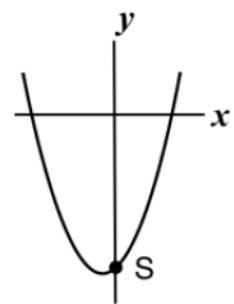
15



Graph: _____

Coordinates of R : _____

16



Graph: _____

Coordinates of S : _____