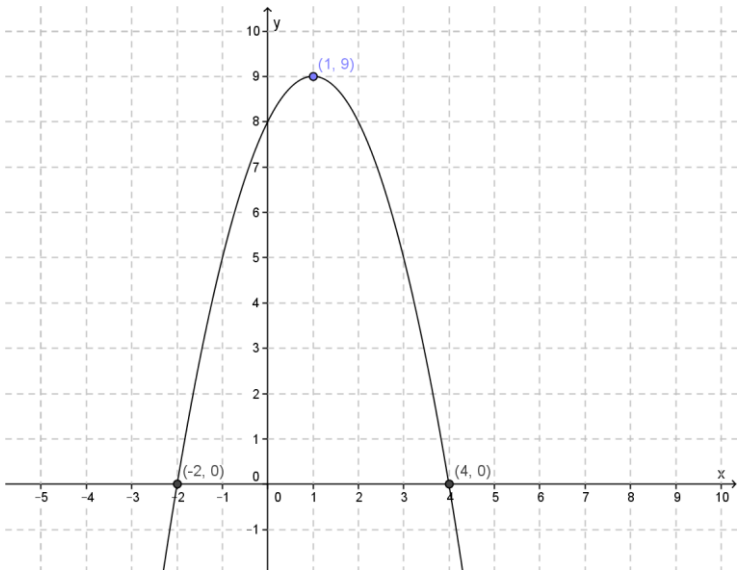
Name: _____ Algebra 2 Quadratics Test Date: _____

1. a) Given the graph below, complete the table that follows.



Features	Values
	(-2,0) and (4,0)
y-intercept	
	(1,9)
Axis of Symmetry	

b) i. Based on the same graph above, write the equation for its function in any form you wish.

ii. Name at least one other form that you could have written your equation in.

2.

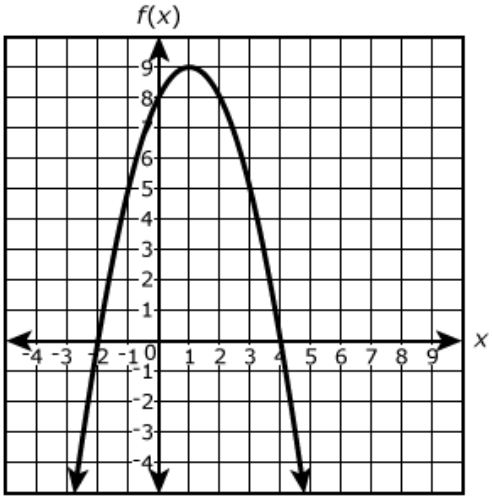
x	-5	-4	-2	0	2	4	5
y	31	17	1	1	17	29	71

a. The table above can be modeled by a quadratic function. What are the y-intercept and line of symmetry? Explain your reasoning.

y-intercept and reasoning:

Line of symmetry and reasoning:

3. Consider two functions: $f(x)$ and $g(x)$. The graph of $f(x)$ is shown below. The function $g(x) = -3x + 2$.



a. Is the *y*-intercept of $f(x)$ greater than, less than, or equal to the *y*-intercept of $g(x)$? Explain your answer.

4. Factor the following and **show all work**:

a) $x^2 - 2x - 5$

b) $3x^2 - 5x - 2$

c) $3x^2 - 10x + 3$

d) $5x^2 + 7x - 6$

5. Describe each function as a transformation of **f(x) = x²** :

a) $f(x) = x^2 - 6$

b) $f(x) = (x + 5)^2 + 2$

c) $f(x) = 2x^2 - 8$

d) $f(x) = -(x - 4)^2 + 3$