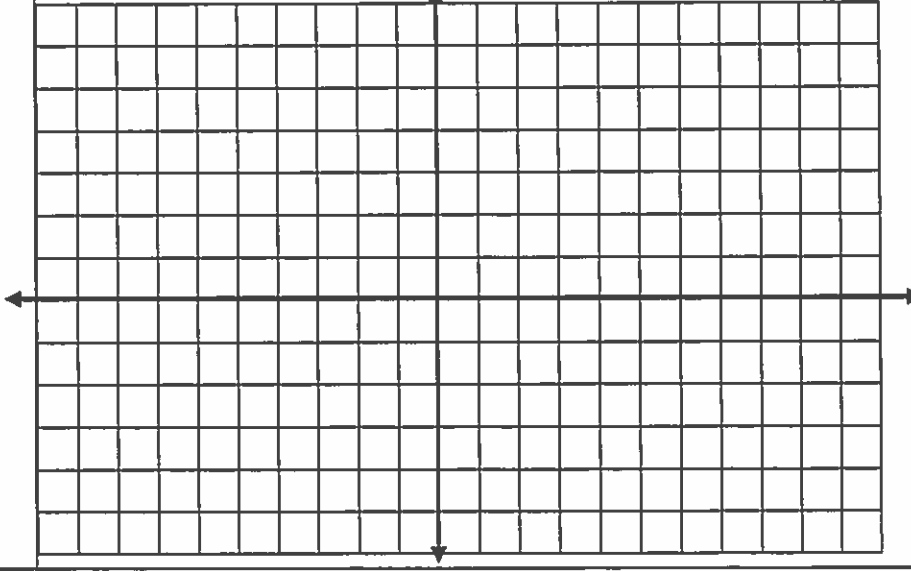


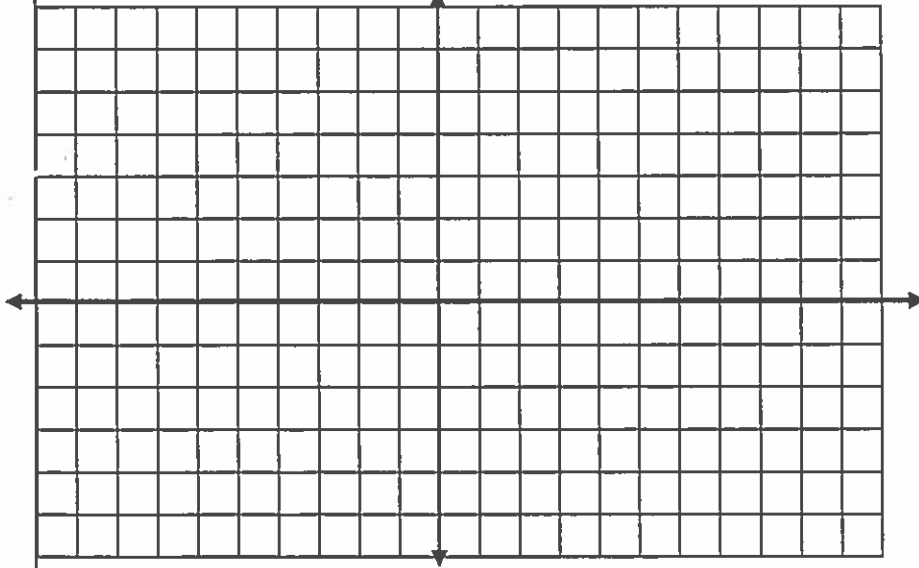
Name: _____

Date: _____

Translations of Quadratic Function – Assignment

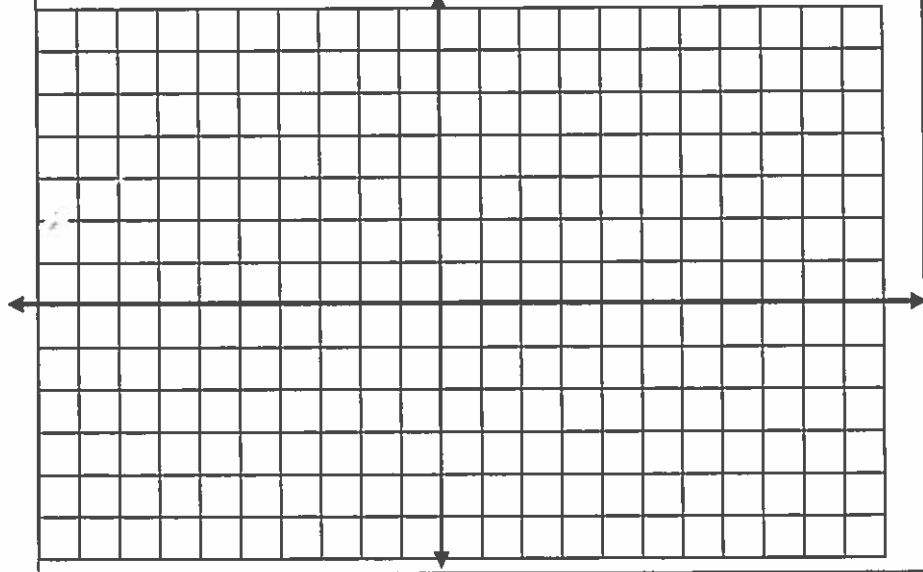
<p>1.</p> 	<p>Equation: $y = x^2 - 4$</p> <p>Rewritten equation:</p> <p>Equation of the axis of symmetry</p> <p>Direction of opening</p> <p>The maximum or minimum value</p> <p>The exact x-intercept(s) if they exist</p> <p>The exact y-intercept</p> <p>Domain</p> <p>Range</p> <p>Describe transformations of $y = x^2$ that generated the quadratic function above.</p>
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2.

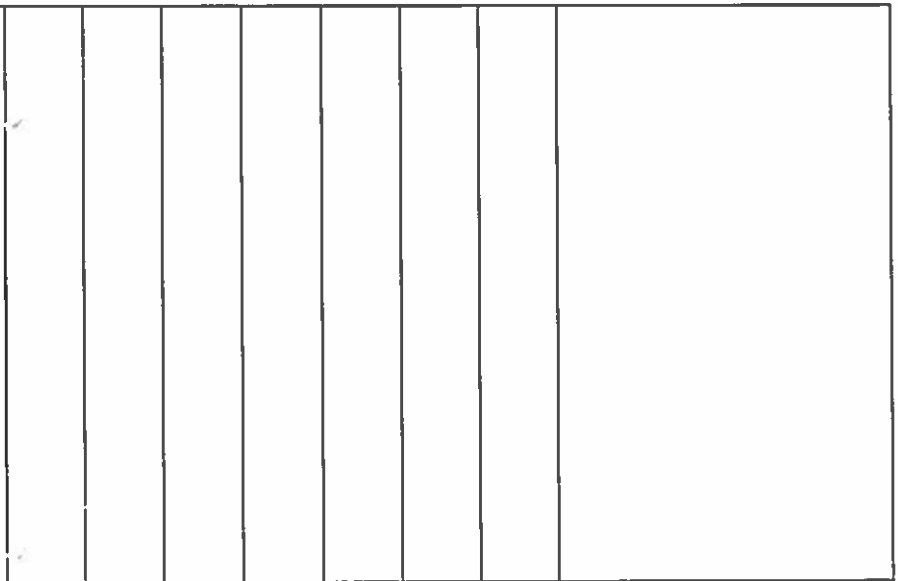


Equation: $y = x^2 + 2$	Rewritten equation:
Equation of the axis of symmetry	
Direction of opening	
The maximum or minimum value	
The exact x-intercept(s) if they exist	
The exact y-intercept	
Domain	
Range	
Describe transformations of $y = x^2$ that generated the quadratic function above.	

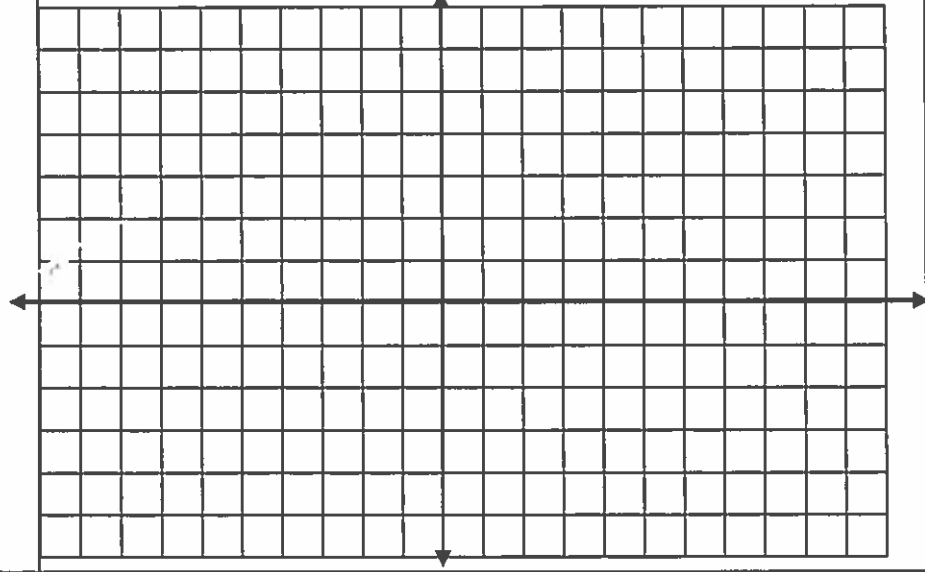
3.



Equation: $y = (x - 2)^2 + 1$	Rewritten equation:
Equation of the axis of symmetry	
Direction of opening	
The maximum or minimum value	
The exact x-intercept(s) if they exist	
The exact y-intercept	
Domain	
Range	
Describe transformations of $y = x^2$ that generated the quadratic function above.	

<p>4.</p> 	<p>Equation: $y = (x + 1)^2 - 2$</p>	<p>Rewritten equation:</p>
<p>Equation of the axis of symmetry</p>		
<p>Direction of opening</p>		
<p>The maximum or minimum value</p>		
<p>The exact x-intercept(s) if they exist</p>		
<p>The exact y-intercept</p>		
<p>Domain</p>		
<p>Range</p>		
<p>Describe transformations of $y = x^2$ that generated the quadratic function above.</p>		

5.



Equation: $y = (x + 3)^2$

Rewritten equation:

Equation of the axis of symmetry

Direction of opening

The maximum or minimum value

The exact x-intercept(s) if they exist

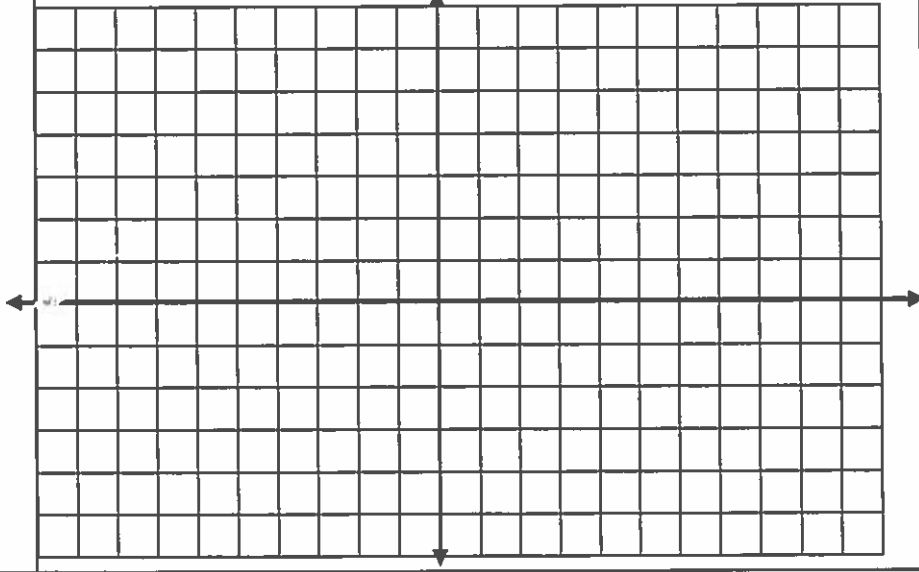
The exact y-intercept

Domain

Range

Describe transformations of $y = x^2$ that generated the quadratic function above.

6.



Equation: $y = -(x - 1)^2$

Rewritten equation:

Equation: of the axis of symmetry

Direction of opening

The maximum or minimum value

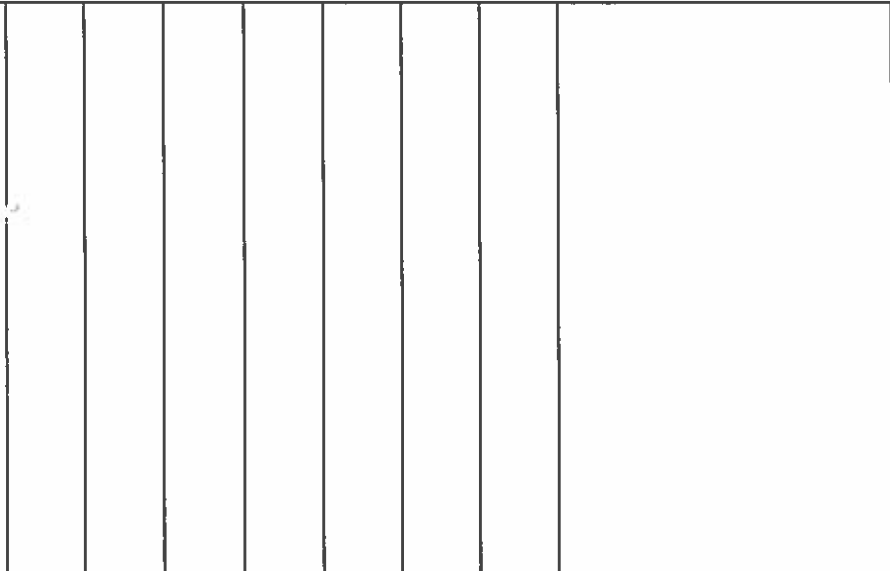
The exact x-intercept(s) if they exist

The exact y-intercept

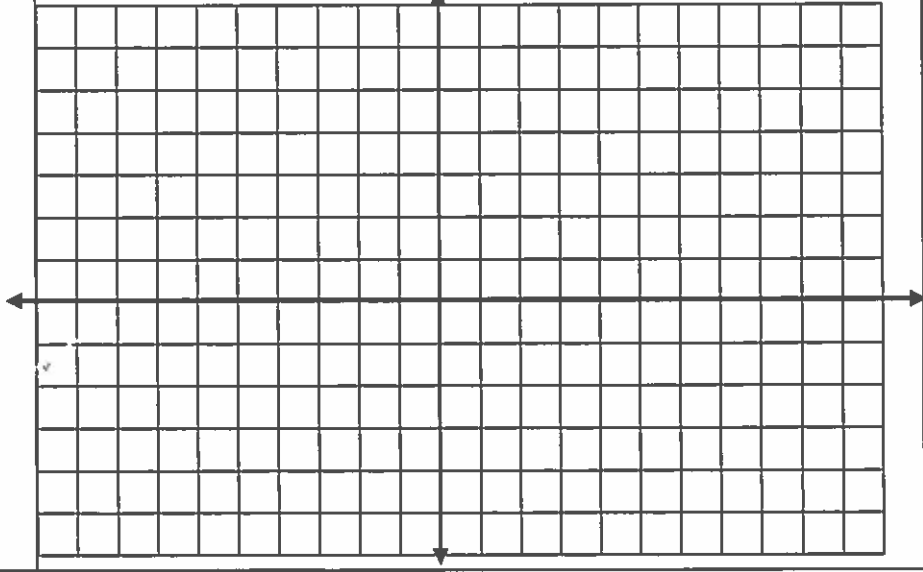
Domain

Range

Describe transformations of $y = x^2$ that generated the quadratic function above.

7.	Equation: $y = -(x + 3)^2 + 1$	Rewritten equation:
	Equation of the axis of symmetry	
	Direction of opening	
	The maximum or minimum value	
	The exact x-intercept(s) if they exist	
	The exact y-intercept	
	Domain	
	Range	
	Describe transformations of $y = x^2$ that generated the quadratic function above.	

8.



Equation: $y = -(x - 1)^2 - 3$	Rewritten equation:
Equation of the axis of symmetry	
Direction of opening	
The maximum or minimum value	
The exact x-intercept(s) if they exist	
The exact y-intercept	
Domain	
Range	
Describe transformations of $y = x^2$ that generated the quadratic function above.	

9. Circle all quadratic functions. If a given relations is not a quadratic function, determine what type of relations it is (linear, radical, rational, polynomial but not quadratic, undefined in the universe of real numbers).

$x^2 + x - 2 = y$	$y = -\sqrt{5} + x - x^2$	$y = -x^4 + x^2 + x - 1$	$y = \sqrt{-4x^2} + x - 15$
$y = \frac{-x + x^2}{2x^2}$	$y = \sqrt{x} + x^2$	$y = x + 5$	$y = -0.5x + \pi x^2$

10. Write the new equation of the parabola $y = x^2$ after the following:

a) A horizontal translation 4 units left and a vertical translation 7 units down.	
b) A reflection in the x-axis and a vertical translation 3 units up.	
c) A horizontal translation right by 10 units and a reflection in the x-axis.	
d) A vertical translation 0.5 units down.	
e) A horizontal translation right by 3 units and vertical translation 5 units down.	

11. If the point (3,9) is on the original parabola, what would the coordinates of this point become:

- a) If the parabola was shifted (translated) up three units and left two units?
- b) If the parabola was reflected in the x-axis, translated vertically down by one unit and horizontally right by 5 units?