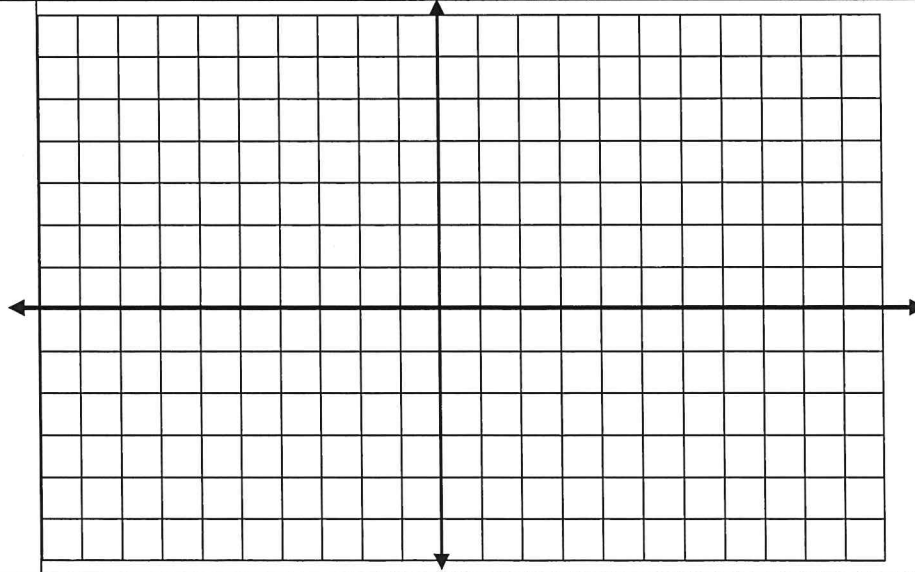
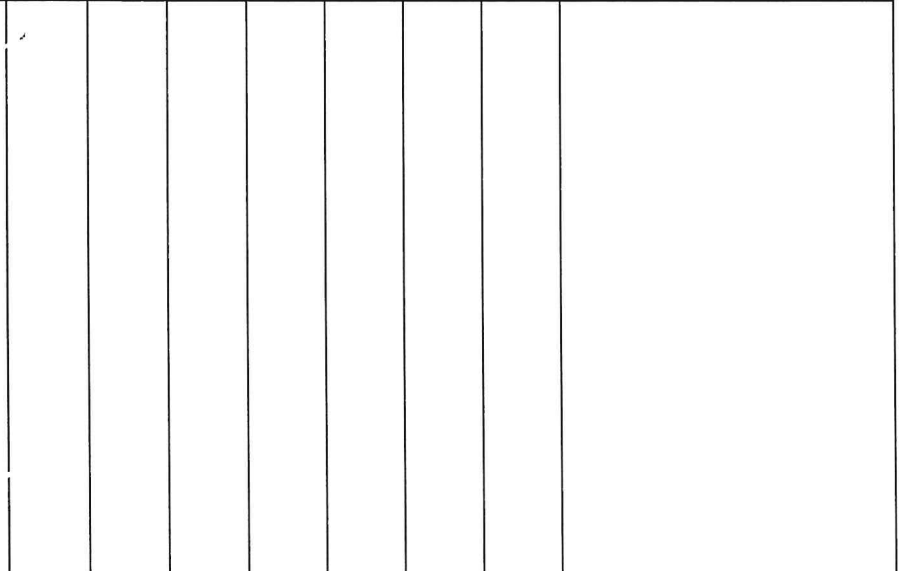
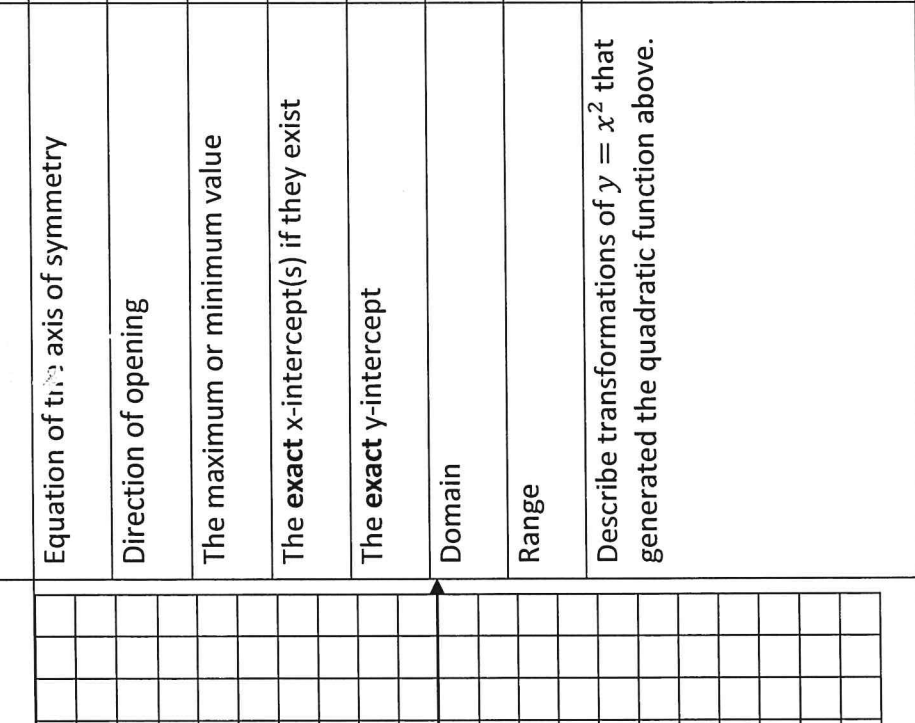


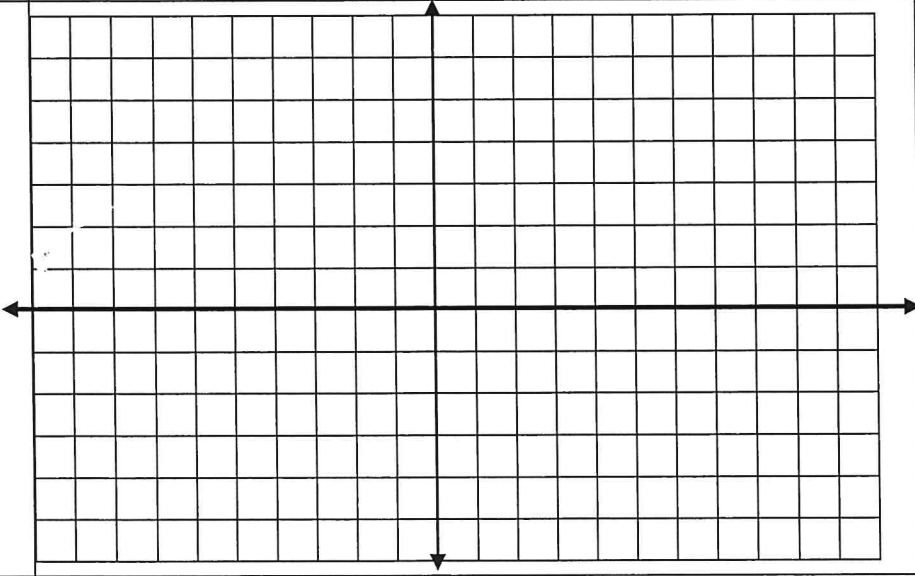
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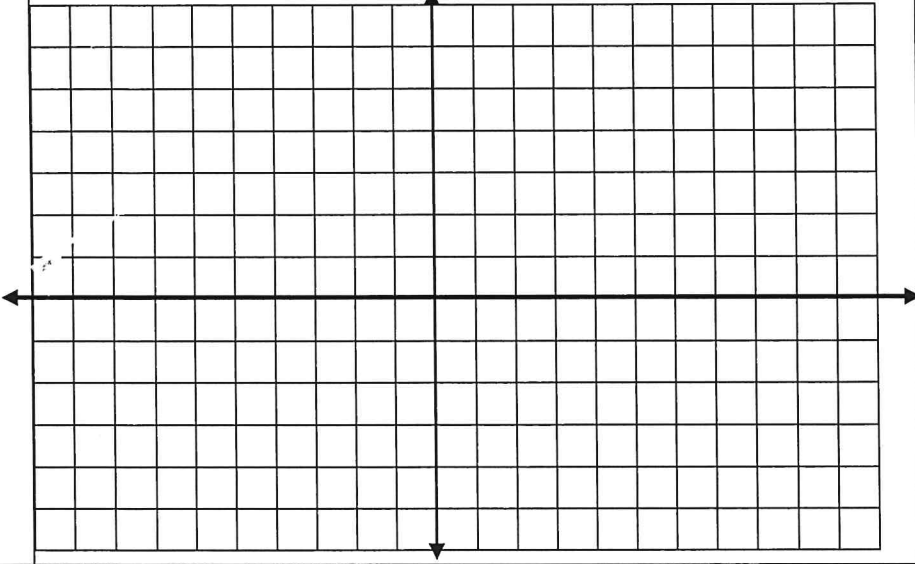
# Translations of Quadratic Function – Assignment

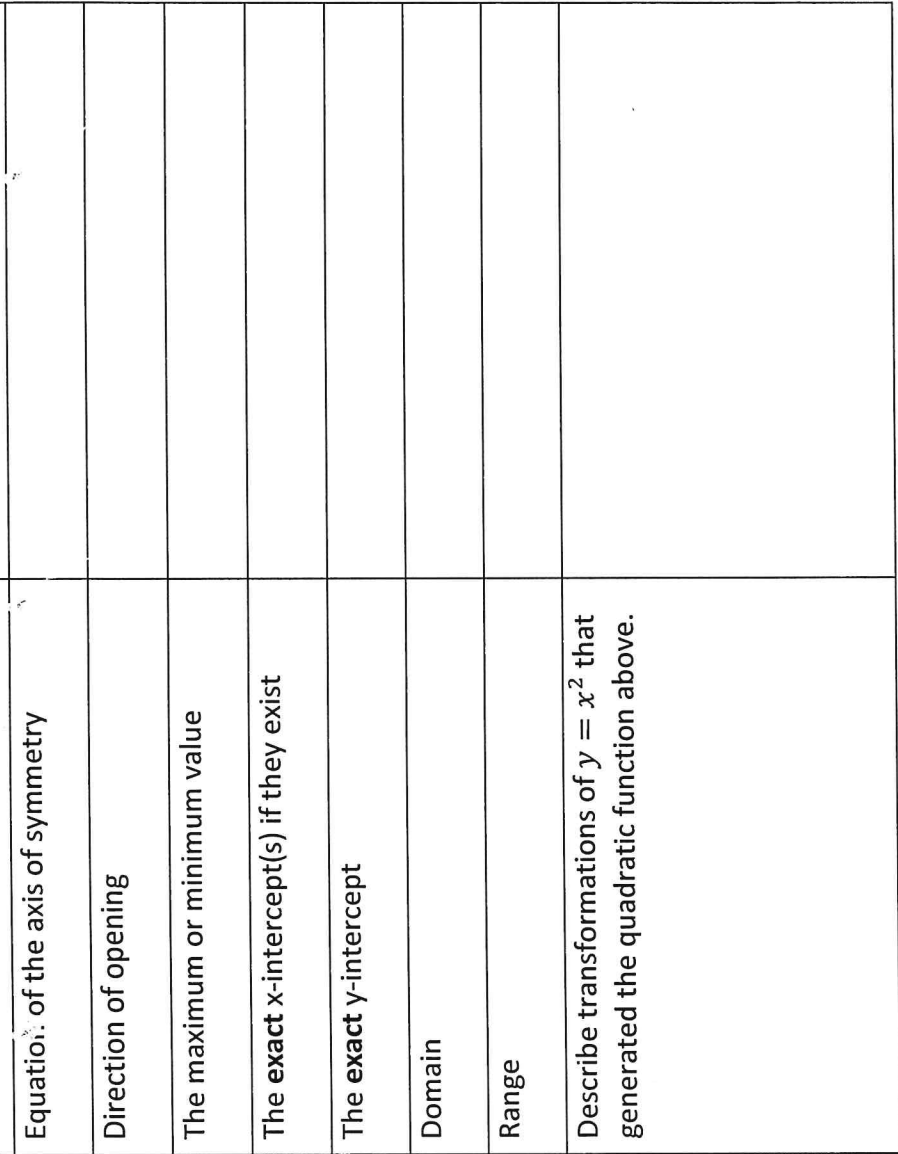
<p>1.</p> 	<p>Equation: <math>y = x^2 - 4</math></p> <p>Equation of the axis of symmetry</p> <p>Direction of opening</p> <p>The maximum or minimum value</p> <p>The exact x-intercept(s) if they exist</p> <p>The exact y-intercept</p> <p>Domain</p> <p>Range</p> <p>Describe transformations of <math>y = x^2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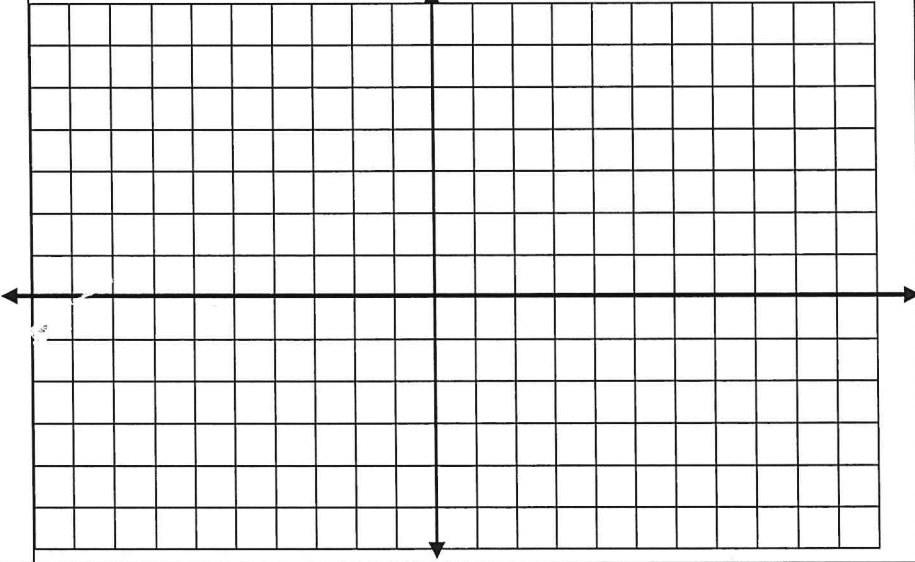
<p>2.</p> 	<p>Equation: <math>y = x^2 + 2</math></p>	<p>Rewritten equation:</p>
<p>Equation of the axis of symmetry</p>		<p>Direction of opening</p>
<p>The maximum or minimum value</p>		<p>The exact x-intercept(s) if they exist</p>
<p>The exact y-intercept</p>		<p>Domain</p>
<p>Range</p>		<p>Describe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

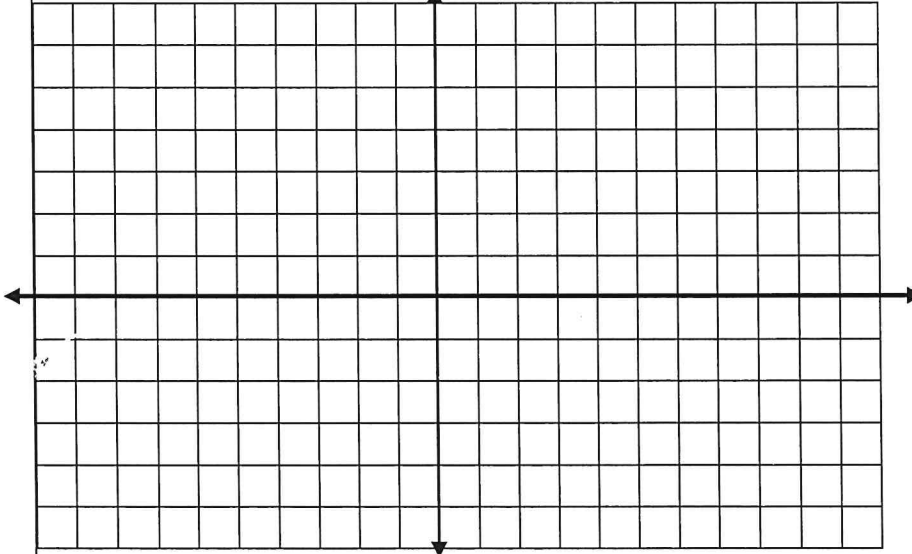
3.	Equation: $y = (x - 2)^2 + 1$	Rewritten equation:
		
Equation of the axis of symmetry		
Direction of opening		
The maximum or minimum value		
The exact x-intercept(s) if they exist		
The exact y-intercept		
Domain		
Range		
Describe transformations of $y = x^2$ that generated the quadratic function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

<p>4.</p> 	<p>Equation: <math>y = (x + 1)^2 - 2</math></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 <math>y = x^2</math> that generated the quadratic function above.</p>	<p>Rewritten equation:</p>
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<p>5.</p> 	<p>Equation: <math>y = (x + 3)^2</math></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 <math>y = x^2</math> that generated the quadratic function above.</p>	<p>Rewritten equation:</p>
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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.

<p>7.</p> 	<p>Equation: <math>y = -(x + 3)^2 + 1</math></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 <math>y = x^2</math> that generated the quadratic function above.</p>	

<p>8.</p> 	<p>Equation: <math>y = -(x - 1)^2 - 3</math></p> <p>Equation of the axis of symmetry</p> <p>Direction of opening</p> <p>The maximum or minimum value</p> <p>The <b>exact</b> x-intercept(s) if they exist</p> <p>The <b>exact</b> y-intercept</p> <p>Domain</p> <p>Range</p> <p>Describe transformations of <math>y = x^2</math> that generated the quadratic function above.</p>	<p>Rewritten equation:</p>
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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?