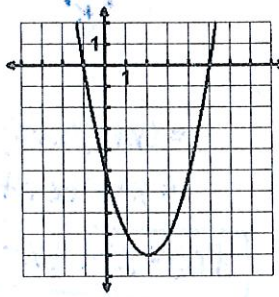
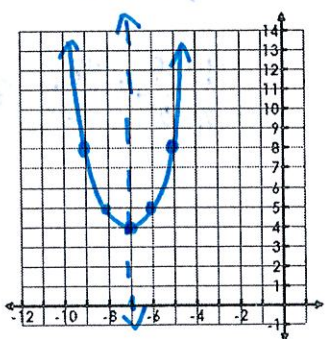
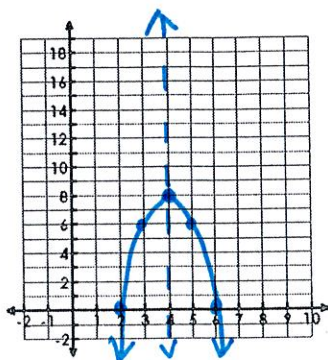
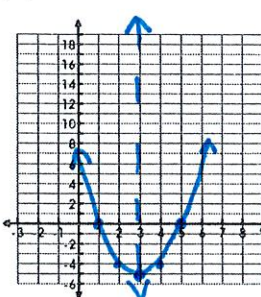
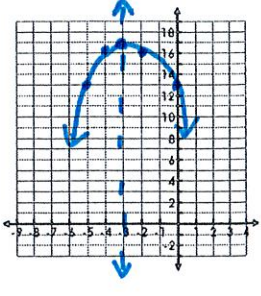


Name: Key

Date: \_\_\_\_\_

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

Topic	Things to remember	Examples	
<p>Characteristics of Quadratics</p>	<p>Domain, Range, Vertex, Axis of Symmetry, Extrema, Increasing, Decreasing, Rates of Change</p>	<p>1. Analyze the graph using the vocabulary under things to remember</p>  <p><math>D: (-\infty, \infty)</math> <math>R: [-9, \infty)</math> Vertex: <math>(2, -9)</math> AOS: <math>x = 2</math> Extrema: Min = <math>-9</math> Inc: <math>(2, \infty)</math> Dec: <math>(-\infty, 2)</math></p>	<p>2. The graph of <math>f(x)</math> has a range <math>y \geq -4</math> and increase from <math>(2, \infty)</math>. Write the equation of <math>f(x)</math>. Find the domain, vertex, axis of symmetry, extrema, interval of decrease.</p> <p><math>y = (x-2)^2 - 4</math> <math>D: (-\infty, \infty)</math> <math>R: [-4, \infty)</math> Vertex: <math>(2, -4)</math> AOS: <math>x = 2</math> Extrema: Min = <math>-4</math> Dec: <math>(-\infty, 2)</math></p>
<p>Write Quadratic Equations using Transformations</p>	<p>Negative in front reflects across x-axis Number in front stretches or shrinks Number inside parenthesis moves left or right Number alone moves up or down</p>	<p>3. Write the equation of a quadratic that has been reflected and shifted right 7.</p> <p><math>y = -(x-7)^2</math></p>	<p>4. Write the equation of a quadratic that has a vertex at <math>(-5, -3)</math>, opens up, and is stretched by a factor of 2.</p> <p><math>y = 2(x+5)^2 - 3</math></p>
<p>Graph Quadratics in Vertex Form</p>	<p>Vertex <math>(h, k)</math> AOS = <math>h</math> Table, Edit Function, Start = AOS Scroll up and down to get other ordered pairs</p>	<p>5. Graph the following function. <math>f(x) = (x+7)^2 + 4</math></p> 	<p>6. Graph the following function. <math>f(x) = -2(x-4)^2 + 8</math></p> 

<p>Graph Quadratics in Standard Form</p>	<p>AOS: <math>x = \frac{-b}{2a}</math>                  Vertex <math>\left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right)\right)</math>                  Table, Edit Function, Start = AOS                  Scroll up and down to get other ordered pairs</p>	<p>7. Graph the following function.  <math>f(x) = x^2 - 6x + 5</math></p> 	<p>8. Graph the following function. <math>f(x) = -x^2 - 6x + 8</math></p> 												
<p>Change form Vertex to Standard Form</p>	<p>Expand the binomial.                  Distribute any number in front of the parenthesis.                  Combine like terms.</p>	<p>9. <math>f(x) = (x+2)^2 - 8</math>  <math>= (x+2)(x+2) - 8</math>  <math>= x^2 + 4x + 4 - 8</math>  <math>f(x) = x^2 + 4x - 4</math></p>	<p>10. <math>f(x) = -3(x-5)^2 + 1</math>  <math>= -3(x-5)(x-5) + 1</math>  <math>= -3(x^2 - 10x + 25) + 1</math>  <math>= -3x^2 + 30x - 75 + 1</math>  <math>f(x) = -3x^2 + 30x - 74</math></p>												
<p>Change from Standard Form to Vertex Form</p>	<p>Find a                  Find the h-value by using <math>x = -b/2a</math>                  Plug in the x to find the h-value                  Write in vertex form.</p>	<p>11. <math>f(x) = x^2 - 2x - 8</math>  <math>a=1</math>     <math>a=1</math>  <math>b=-2</math>    <math>h=1</math>  <math>c=-8</math>    <math>k=-9</math>  <math>f(x) = 1(x-1)^2 - 9</math></p>	<p>12. <math>h(x) = x^2 + 6x + 9</math>  <math>a=1</math>     <math>a=1</math>  <math>b=6</math>     <math>h=-3</math>  <math>c=9</math>     <math>k=0</math>  <math>h(x) = (x+3)^2</math></p>												
<p>Compare Quadratic Functions in Different Forms</p>	<p>Find the axis of symmetry, vertex, slope, and y-intercepts based on the equation or table given.</p>	<p>13. <math>f(x) = 2x^2 - 12x + 25</math>                  Axis of Symmetry: <math>x=3</math>                  Vertex: <math>(3, 1)</math>                  Slope from <math>0 &lt; x &lt; 2</math>: <math>-8</math>                  y-intercept: <math>(0, 25)</math>  <math>(0, 25)</math> <math>(2, 9)</math></p>	<p>14.  <table border="1" data-bbox="1071 1176 1461 1260"> <tr> <td>x</td> <td>-4</td> <td>-3</td> <td>-2</td> <td>0</td> <td>2</td> </tr> <tr> <td>g(x)</td> <td>7</td> <td>8</td> <td>7</td> <td>-1</td> <td>-17</td> </tr> </table>                 Axis of Symmetry: <math>x=-3</math>                  Vertex: <math>(-3, 8)</math>                  Slope from <math>0 &lt; x &lt; 2</math>: <math>-8</math>                  y-intercept: <math>(0, -1)</math></p>	x	-4	-3	-2	0	2	g(x)	7	8	7	-1	-17
x	-4	-3	-2	0	2										
g(x)	7	8	7	-1	-17										

$$\frac{9-25}{2-0} = \frac{-16}{2} = -8$$

$$(0, -1) \quad (2, -17)$$

$$\frac{-17 - (-1)}{2 - 0} = \frac{-16}{2} = -8$$