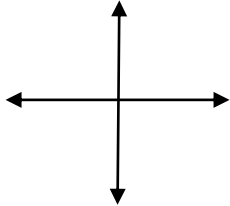
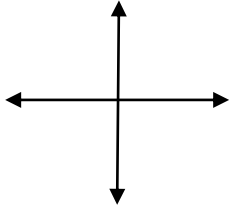
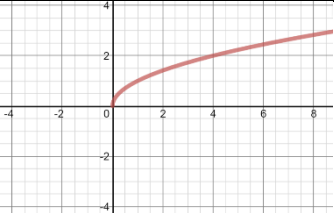
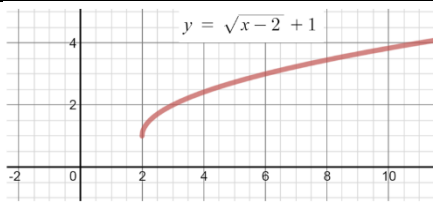
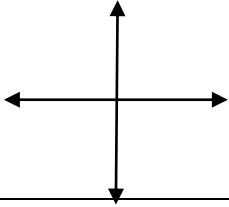
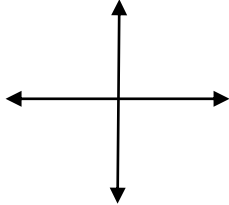
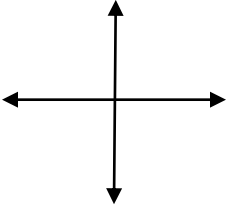
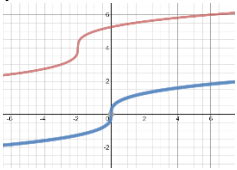
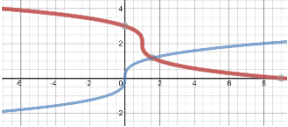
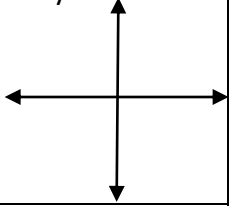
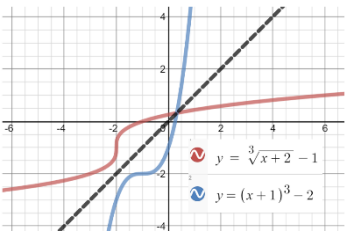


# Exploring Inverses of Functions

Name \_\_\_\_\_

Algebra II Lesson 5.6 Exploration

Go to [student.desmos.com](https://student.desmos.com) and use class code \_\_\_\_\_. Follow the directions in the activity. Use this sheet for any notes you may want to take.

<p>Complete the table.</p> <table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">x</th> <th style="padding: 5px;"><math>y = x^2</math></th> </tr> </thead> <tbody> <tr><td style="padding: 5px;">-3</td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;">-2</td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;">-1</td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;">0</td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;">1</td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;">2</td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;">3</td><td style="padding: 5px;"></td></tr> </tbody> </table> <div style="text-align: center; margin-top: 20px;">  </div>	x	$y = x^2$	-3		-2		-1		0		1		2		3		<p>Choose "nice" numbers for x and find <math>y = \sqrt{x}</math> for those values of x.</p> <table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">x</th> <th style="padding: 5px;"><math>y = \sqrt{x}</math></th> </tr> </thead> <tbody> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> </tbody> </table> <div style="text-align: center; margin-top: 20px;">  </div>	x	$y = \sqrt{x}$										
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<p>Quadratic equation shifted 2 right and 3 up:</p> <p>Square root shifted 2 right and 3 up:</p> <div style="text-align: center; margin-top: 20px;">  </div>	<p>Parabola opening to the right shifted 1 unit left and 2 units down:</p> <div style="text-align: center; margin-top: 20px;">  </div>																												
<p>What equation fits these points?</p> <table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;"><math>x_1</math></th> <th style="padding: 5px;"><math>y_1</math></th> </tr> </thead> <tbody> <tr><td style="padding: 5px;">-8</td><td style="padding: 5px;">-2</td></tr> <tr><td style="padding: 5px;">-1</td><td style="padding: 5px;">-1</td></tr> <tr><td style="padding: 5px;">0</td><td style="padding: 5px;">0</td></tr> <tr><td style="padding: 5px;">1</td><td style="padding: 5px;">1</td></tr> <tr><td style="padding: 5px;">2</td><td style="padding: 5px;">8</td></tr> </tbody> </table> <div style="text-align: center; margin-top: 20px;">  </div>	$x_1$	$y_1$	-8	-2	-1	-1	0	0	1	1	2	8	<p>How does the red function compare to the blue parent function?</p> 																
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1	1																												
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<p>How does the red function compare to the blue parent function?</p> 	<p>Graph of <math>y = x^2</math>, the inverse of <math>y = x^2</math> and <math>y = x</math></p> <div style="text-align: center; margin-top: 20px;">  </div>																												
<p>How are the equations related?</p> 	<ol style="list-style-type: none"> <li>1  <math>y = \sqrt{x-2} + 3</math></li> <li>2  <math>y = -\sqrt{x-2} + 3</math></li> <li>3  <math>y = x</math></li> <li>4 <span style="border: 1px solid gray; padding: 2px;">Type an equation in line 5 that will be a reflection of the red parabola across the line <math>y = x</math>.</span></li> </ol>																												

