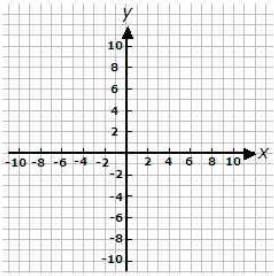
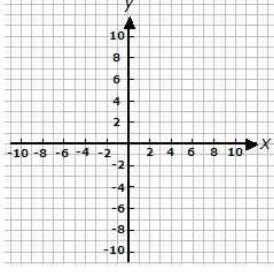
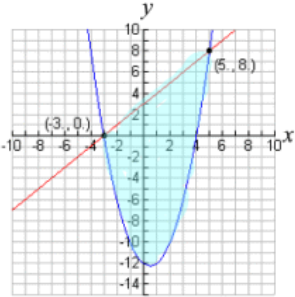
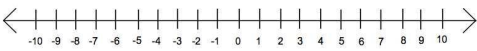
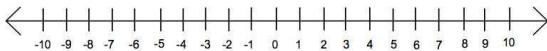


Nonlinear Systems - HOMEWORK

Nonlinear Systems – two equations to solve together where one is a parabola or a circle.

How to do it? Graph in the calculator, or set the two equations equal to each other.

<p>1. $y = x^2 - x - 6$ $y = 2x - 2$</p>	<p>2. Find the solution of the system: $y = x^2 - 2x + 4$ $x = y - 2$</p>																																																
<p>3. Sketch the graph of</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;">  </div> <div style="flex: 1; padding-left: 20px;"> $y \leq x^2 - 4x$ $y \geq x + 1$ </div> </div>	<p>4. Sketch the graph of</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;">  </div> <div style="flex: 1; padding-left: 20px;"> $y \geq x^2 - 4x - 2$ $y \leq x - 2$ </div> </div>																																																
<p>5. Solve the system: $y - 2x = -2$ $y = x^2 - 2x + 2$</p> <p>(,)</p>	<p>6. Which nonlinear system is shown in the graph?</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>A. $y > x^2 - x - 12$ $y > x + 3$</p> <p>B. $y \geq x^2 - x - 12$ $y \leq x + 3$</p> <p>C. $y \leq x^2 - x - 12$ $y \geq x + 3$</p> </div> <div style="flex: 1;">  </div> </div>																																																
<p>7. Solve the system: $y = -x^2 + 5$ $y - x = 1$</p> <p>Round to 2 decimal places:</p> <p>(,) (,)</p>	<p>8. Mateo produced the following table on his calculator to find the solutions to a linear-quadratic system of equations. Based on this table, which of the following sets gives the x-values that solve this system?</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>A. $\{x = -4, 2\}$</p> <p>B. $\{x = -4, 3\}$</p> <p>C. $\{x = 3, 6\}$</p> <p>D. $\{x = -2, 1\}$</p> </div> <div style="flex: 1;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th>X</th> <th>Y₁</th> <th>Y₂</th> </tr> </thead> <tbody> <tr> <td>-4</td> <td>1</td> <td>11</td> </tr> <tr> <td>-3</td> <td>1</td> <td>11</td> </tr> <tr> <td>-2</td> <td>1</td> <td>11</td> </tr> <tr> <td>-1</td> <td>1</td> <td>11</td> </tr> <tr> <td>0</td> <td>1</td> <td>11</td> </tr> <tr> <td>1</td> <td>1</td> <td>11</td> </tr> <tr> <td>2</td> <td>1</td> <td>11</td> </tr> <tr> <td>3</td> <td>1</td> <td>11</td> </tr> <tr> <td>4</td> <td>1</td> <td>11</td> </tr> <tr> <td>5</td> <td>1</td> <td>11</td> </tr> <tr> <td>6</td> <td>1</td> <td>11</td> </tr> <tr> <td>7</td> <td>1</td> <td>11</td> </tr> <tr> <td>8</td> <td>1</td> <td>11</td> </tr> <tr> <td>9</td> <td>1</td> <td>11</td> </tr> <tr> <td>10</td> <td>1</td> <td>11</td> </tr> </tbody> </table> <p>X = -4</p> </div> </div>	X	Y ₁	Y ₂	-4	1	11	-3	1	11	-2	1	11	-1	1	11	0	1	11	1	1	11	2	1	11	3	1	11	4	1	11	5	1	11	6	1	11	7	1	11	8	1	11	9	1	11	10	1	11
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<p>9. $x^2 + 9x + 8 \geq 0$</p> <div style="text-align: center;">  </div>	<p>10. $x^2 + 7x + 10 \leq 0$</p> <div style="text-align: center;">  </div>																																																