

Represent and solve equations and inequalities (Standards A.REI.11).	
<b>Standard A.REI.11:</b> Explain why the $x$ -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$ ; find the solutions approximately, for example, using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. ★	
Concepts and Skills to Master	
<ul style="list-style-type: none"> <li>• Approximate solutions to systems of two equations using graphing technology.</li> <li>• Approximate solutions to systems of two equations using tables of values.</li> <li>• Explain why the <math>x</math>-coordinates of the points where the graphs of the equations <math>y = f(x)</math> and <math>y = g(x)</math> intersect are the solutions of the equation <math>f(x) = g(x)</math>.</li> <li>• Be able to express that when <math>f(x) = g(x)</math>, the two equations have the same solution(s).</li> <li>• Explain, in their own words, how the <math>x</math>-coordinate of a solution to the system <math>y = f(x)</math> and <math>y = g(x)</math> solves <math>f(x) = g(x)</math>.</li> <li>• Find approximate solutions for the system <math>y = f(x)</math> and <math>y = g(x)</math> using graphs or tables.</li> <li>• Use successive approximations as a method to solve the system <math>y = f(x)</math> and <math>y = g(x)</math>.</li> </ul>	
Related Standards: Current Course	Related Standards: Future Courses
<a href="#">III.A.CED.2</a> , <a href="#">III.A.CED.3</a> , <a href="#">III.A.REI.2</a> , <a href="#">III.F.LE.5</a> , <a href="#">III.F.TF.7</a>	P.A.REI.8, P.A.REI.9

## Support for Teachers

Critical Background Knowledge (Access Background Knowledge)
<ul style="list-style-type: none"> <li>• Understanding that the graph of an equation in two variables is the set of all its solutions plotted on a coordinate plane (<a href="#">I.A.REI.10</a>)</li> <li>• Explain why the <math>x</math>-coordinate is the solution of the system of equations where <math>f(x) = g(x)</math> (<a href="#">I.A.REI.11</a>)</li> </ul>
Academic Vocabulary
system of equations, intersection, approximation, root, zero, solution
Resources
<a href="https://www.uen.org/core/core.do?courseNum=5630#71607">Curriculum Resources</a> : <a href="https://www.uen.org/core/core.do?courseNum=5630#71607">https://www.uen.org/core/core.do?courseNum=5630#71607</a>