SOLUTIONS

For each section, show:

- a sample problem to solve.
- what a solution might look like (do not actually solve it – just give an example).
- what a graph of the solution might look like.
- how or what you would check.

<table>
<thead>
<tr>
<th>Type of Equation</th>
<th>Sample</th>
<th>Solution</th>
<th>Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>An equation with one variable</td>
<td>$(x + 2)^2 = x + 14$</td>
<td>$x = 2$ or $x = -5$</td>
<td>Substitute solutions back into the original equation to see if it is a true statement.</td>
</tr>
<tr>
<td>An equation with two variables</td>
<td>$y = (x + 2)^2$</td>
<td>See graph at right.</td>
<td>Test to make sure that points on the curve make the original equation true.</td>
</tr>
</tbody>
</table>
| A system of equations with two variables | $y = (x + 2)^2$  
$y = 4 - x$ | $(-5, 9)$ and $(0, 4)$ | Make sure solution/intersection points make both equations true. |
an inequality with one variable

sample: \((x + 2)^2 > x + 14\)

solution: \(x < -5\) or \(x > 2\)

check: Test shaded points to verify that they make the inequality true.

an inequality with two variables

sample: \(-2y < x + 14\)

solution: See graph at right.

check: Test shaded points to verify that they make the inequality true.

a system of inequalities with two variables

sample: \(y < (x + 2)^2\)
\(y > 4 - x\)

solution: See graph at right.

check: Test shaded points to verify that they make both inequalities true.