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.

An equation with one variable:
Sample: \((x + 2)^2 = x + 14\)
Solution: \(x = 2\) or \(x = -5\)

Check: Substitute solutions back into the original equation to see if it is a true statement.

An equation with two variables:
Sample: \(y = (x + 2)^2\)
Solution: See graph at right.

Check: Test to make sure that points on the curve make the original equation true.

A system of equations with two variables:
Sample: \(y = (x + 2)^2\)
\[ y = 4 - x \]
Solution: \((-5, 9)\) and \((0, 4)\)

Check: Make sure solution/intersection points make both equations true.
SOLUTIONS

An inequality with one variable:
Sample: \((x + 2)^2 > x + 14\)
Solution: \(x < -5 \text{ or } x > 2\)

\[\text{Check: Test shaded points to verify that they make the inequality true.}\]

An inequality with two variables:
Sample: \(-2y < x + 14\)
Solution: See graph at right.

\[\text{Check: Test shaded points to verify that they make the inequality true.}\]

A system of inequalities with two variables:
Sample: \(y < (x + 2)^2\)
\(y > 4 - x\)
Solution: See graph at right.

\[\text{Check: Test shaded points to verify that they make both inequalities true.}\]