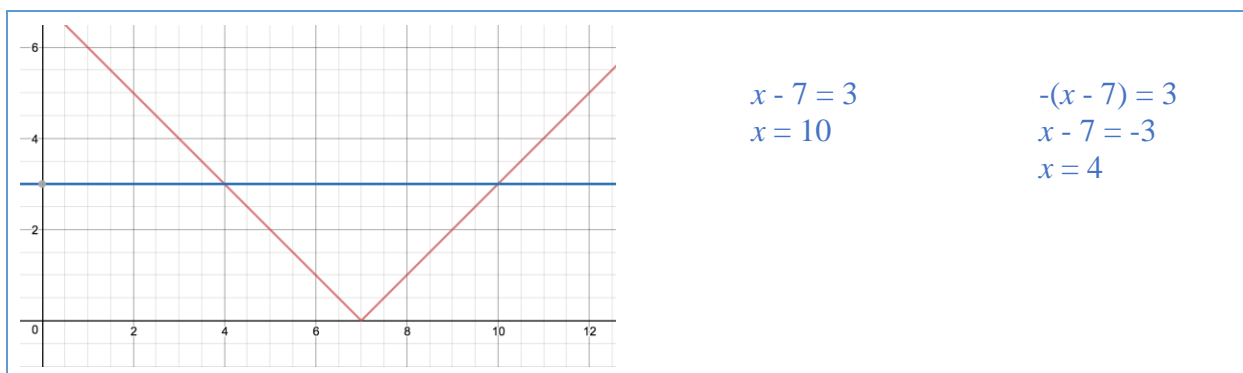


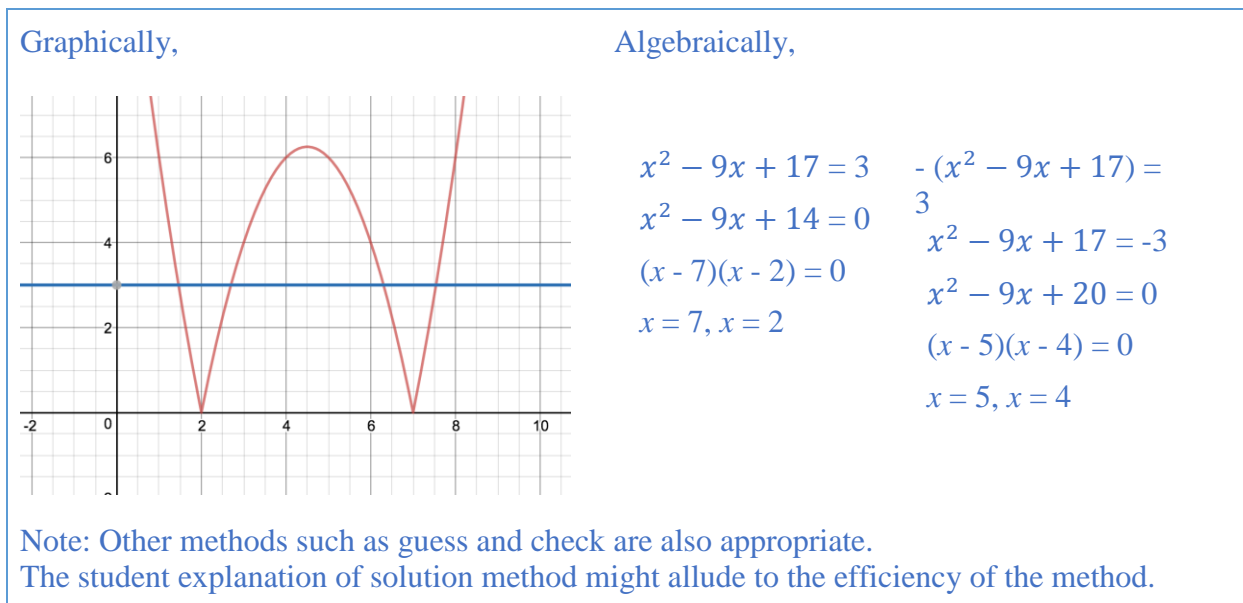
Absolute Value ARC Assessment—Answer Key

1. Solve the equation $|x - 7| = 3$ in two ways:

- Graphically: Show your system of equations and provide a sketch of your graphs.
- Algebraically: Show the piecewise functions used.



2. Solve the equation $|x^2 - 9x + 17| = 3$ using a method of your choice. Why did you choose that particular method?



3. Consider the functions $f(x) = (x - 3)^2 - 4$ and $g(x) = |f(x)|$. Explain how to use reflections to sketch the graph of $g(x)$.

[A solution might include the idea that the portion of the graph of $f(x)$ that is below the x -axis will be reflected across the x -axis in the graph of $g(x)$.]

4. Explain why there is no solution to the following problem: $|x^2 - 4| = -2$.

[Graphically, there is no intersection for the system of equations $y = |x^2 - 4|$ and $y = -2$.

Algebraically, the solution values do not create a correct equality when substituted back into the original equation.]