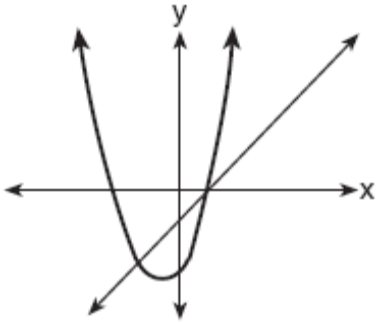
A.G.9: Solve systems of linear and quadratic equations graphically. Note: Only use systems of linear and quadratic equations that lead to solutions whose coordinates are integers.

1. 060507a, P.I. A.G.9
The accompanying diagram shows the graphs of a linear equation and a quadratic equation.

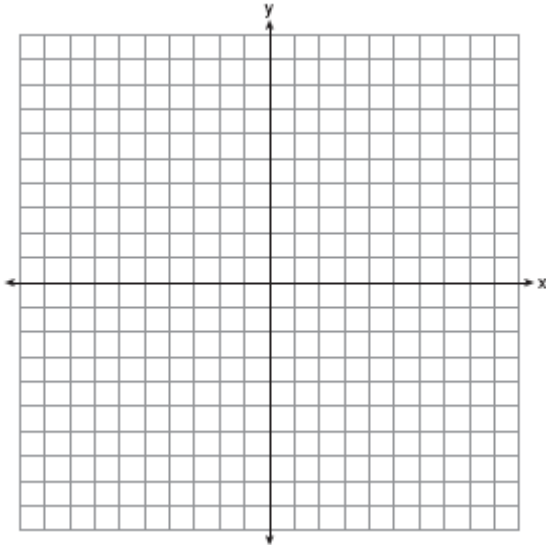


How many solutions are there to this system of equations?

[A] 3 [B] 0 [C] 2 [D] 1

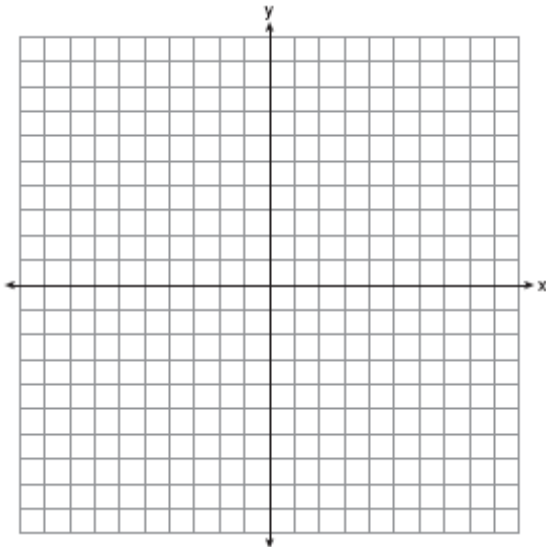
2. 080839ia, P.I. A.G.9
On the set of axes below, solve the following system of equations graphically and state the coordinates of all points in the solution set.

$$y = x^2 + 4x - 5$$
$$y = x - 1$$



3. fall0738ia, P.I. A.G.9
Solve the following systems of equations graphically, on the set of axes below, and state the coordinates of the point(s) in the solution set.

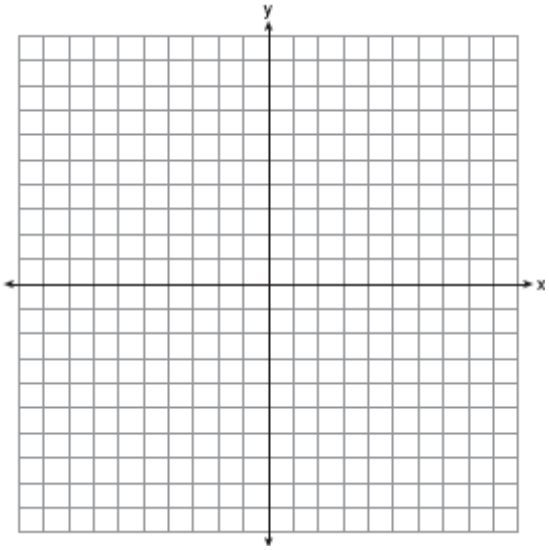
$$y = x^2 - 6x + 5$$
$$2x + y = 5$$



4. 060939ia, P.I. A.G.9

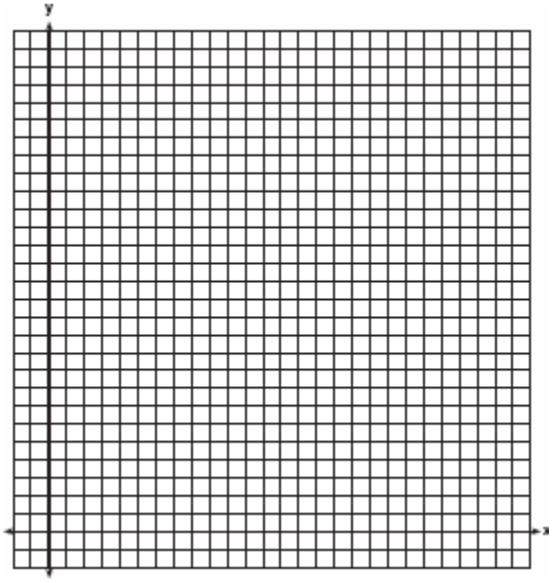
On the set of axes below, solve the following system of equations graphically for all values of x and y.

$$y = x^2 - 6x + 1$$
$$y + 2x = 6$$



5. 060235a, P.I. A.G.9

A rocket is launched from the ground and follows a parabolic path represented by the equation $y = -x^2 + 10x$. At the same time, a flare is launched from a height of 10 feet and follows a straight path represented by the equation $y = -x + 10$. Using the accompanying set of axes, graph the equations that represent the paths of the rocket and the flare, and find the coordinates of the point or points where the paths intersect.



A.G.9: Solve systems of linear and quadratic equations graphically. Note: Only use systems of linear and quadratic equations that lead to solutions whose coordinates are integers.

[1] C

[4] Appropriate graphs are drawn, and (1, 0) and (-4, -5) are stated.
[3] Appropriate work is shown, but one graphing error is made, but appropriate solutions are stated.
or [3] Both graphs are drawn correctly, but only one solution is stated.
[2] Appropriate work is shown, but two or more graphing errors are made, but appropriate solutions are stated.
or [2] Appropriate work is shown, but one conceptual error is made, such as graphing a line instead of a parabola, but appropriate solutions are stated.
or [2] Both graphs are drawn correctly, but no solutions are stated.
or [2] (1, 0) and (-4, -5) are found as the points of intersection, but a method other than graphic is used.
[1] Appropriate work is shown, but one conceptual error and one graphing error are made.
or [1] The system is solved algebraically for only the x values, y values, or the coordinates of one point.
or [1] One graph is drawn correctly, but no further correct work is shown.
or [1] (1, 0) and (-4, -5) are stated, but no work is shown.
[0] (1,0) or (-4, -5) is stated, but no work is shown.
or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an
[2] obviously incorrect procedure.

[4] Correct graphs are drawn, and (0,5) and (4,–3) are stated.
[3] Both equations are graphed, but one graphing error is made, but appropriate solutions are stated.
or [3] Both graphs are drawn correctly, but only one solution is stated.
[2] Both graphs are drawn correctly, but no solutions are stated.
or [2] Both equations are graphed, but two or more graphing errors are made, but appropriate solutions are stated.
or [2] Appropriate work is shown to find (0,5) and (4,–3), but a method other than graphing is used.
or [2] Both equations are graphed, but one conceptual error is made.
[1] Both equations are graphed, but one conceptual error and one graphing error are made.
or [1] (0,5) and (4,–3) are stated, but no work is shown.
[0] (0,5) or (4,–3) is stated, but no work is shown.
or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an
[3] obviously incorrect procedure.

[4] Both equations are graphed correctly, and (-1,8) and (5,-4) are stated.
[3] Appropriate work is shown, but one computational or graphing error is made, but the appropriate points of intersection are stated.
or [3] Both equations are graphed correctly, but only one point of intersection is stated.
[2] Appropriate work is shown, but two or more computational or graphing errors are made, but appropriate points of intersection are stated.
or [2] Appropriate work is shown, but one conceptual error is made.
or [2] Both equations are graphed correctly, but the points of intersection are not stated or are stated incorrectly.
or [2] (-1,8) and (5,-4) are found as points of intersection, but a method other than a graphic method is used.
[1] Appropriate work is shown, but one conceptual error and one computational or graphing error are made.
or [1] One of the equations is graphed correctly, but no further correct work is shown.
or [1] (-1,8) and (5,-4) are stated, but no work is shown.
[0] (-1,8) or (5,-4) is stated, but no work is shown.
or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[4]

[4] (10,0) and (1,9), and both graphs are drawn correctly.
[3] Both graphs are drawn correctly, but only one solution is stated correctly.
or [3] One graph of equal difficulty is drawn incorrectly, but the solutions are appropriate, based on the graphs.
[2] (10,0) and (1,9), but the problem is solved algebraically instead of graphically.
or [2] One graph of equal difficulty is drawn incorrectly, and only one solution is appropriate, based on the graphs.
[1] Both the parabola and the line are graphed incorrectly, but the solutions are appropriate, based on the graphs.
or [1] Incorrect solutions result from an algebraic method.
or [1] (10,0) and (1,9), but no work is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[5]