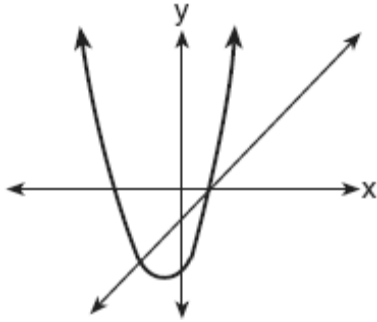


Section 13-4: Graphic Solution of a Quadratic-Linear System

1. 060507a

The accompanying diagram shows the graphs of a linear equation and a quadratic equation.



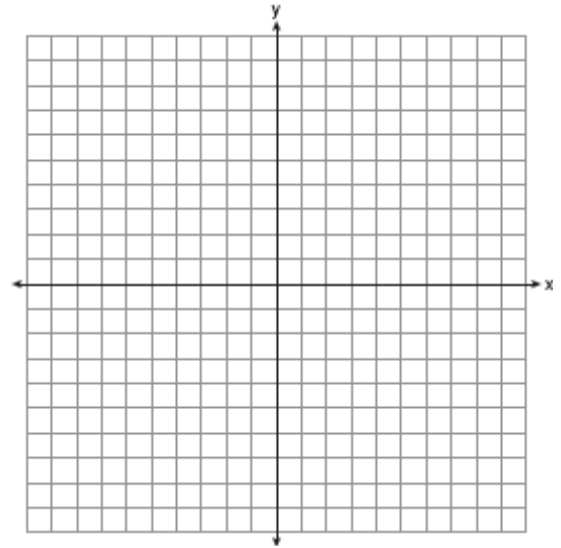
How many solutions are there to this system of equations?

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

2. fall0738ia, P.I. A.G.9

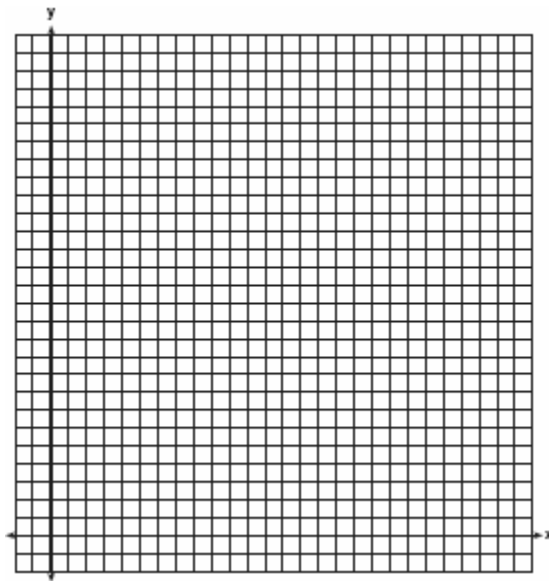
Solve the following systems of equations graphically, on the set of axes below, and state the coordinate(s) of the point(s) in the solution set.

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



3. 060235a, P.I. A.G.9

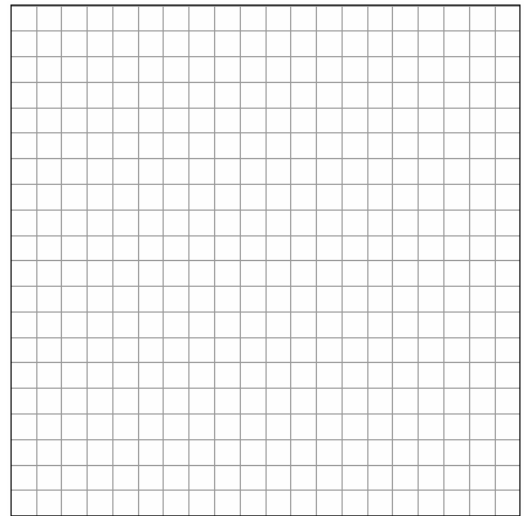
A rocket is launched from the ground and follows a parabolic path represented by the equation $y = -x^2 + 10x$. At the same time, a flare is launched from a height of 10 feet and follows a straight path represented by the equation $y = -x + 10$. Using the accompanying set of axes, graph the equations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



4. 060328b, P.I. G.G.70

The price of a stock, $A(x)$, over a 12-month period decreased and then increased according to the equation

$A(x) = 0.75x^2 - 6x + 20$, where x equals the number of months. The price of another stock, $B(x)$, increased according to the equation $B(x) = 2.75x + 1.50$ over the same 12-month period. Graph and label both equations on the accompanying grid. State all prices, to the *nearest dollar*, when both stock values were the same.



[1] D

[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

[2] obviously incorrect procedure.

[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

[3] incorrect procedure.

[4] 9 and 26, and appropriate work is shown, such as graphing and labeling the equations and identifying the points of intersection.

[3] Both functions are graphed correctly, and the points of intersection are indicated, but the prices are not stated.

or [3] The parabola is graphed correctly, but the line is graphed incorrectly, but appropriate prices are stated.

[2] The line and the parabola are graphed and labeled, but a conceptual error is made, such as only one price is found because the graph of the parabola is incomplete.

or [2] The line is graphed correctly, but the parabola is graphed incorrectly, but appropriate prices are stated.

or [2] 9 and 26, but only an algebraic solution is shown.

[1] Both the line and the parabola are graphed incorrectly, but appropriate prices are stated.

or [1] 9 and 26, but no work is shown.

[0] 9 or 26, 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

[4] obviously incorrect procedure.