Regents Exam Questions A.G.9: Quadratic-Linear Systems 2
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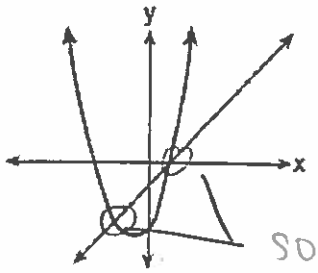
Name: KEY

A.G.9: Quadratic-Linear Systems 2:Solve systems of linear and quadratic equations graphically

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



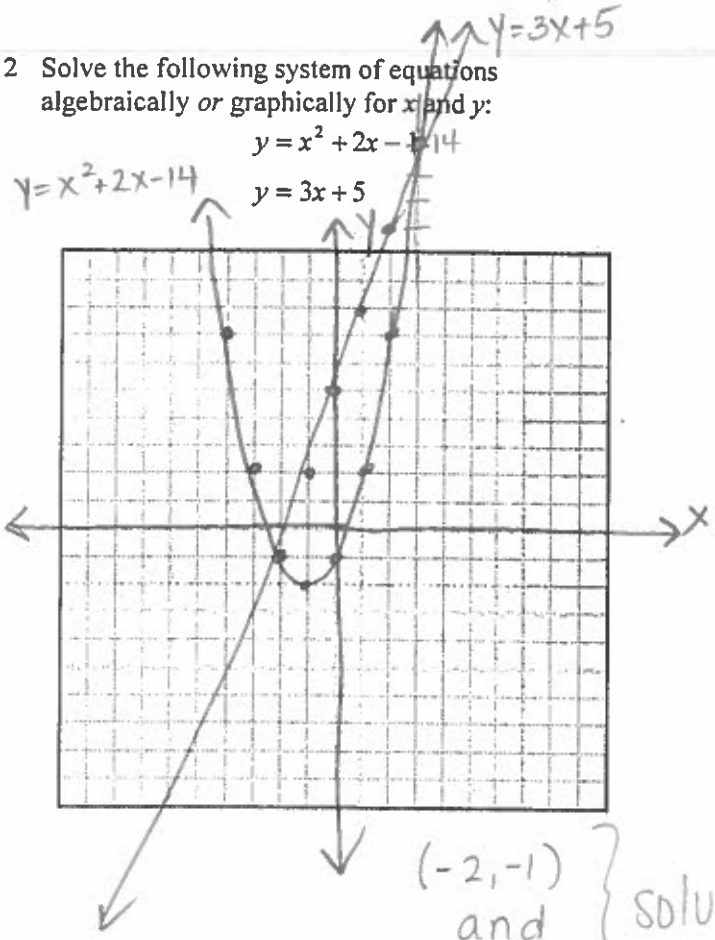
solutions

How many solutions are there to this system of equations?

1) 1
2) 2
3) 3
4) 0

2 Solve the following system of equations algebraically *or* graphically for x and y:

$$y = x^2 + 2x - 14$$
$$y = 3x + 5$$

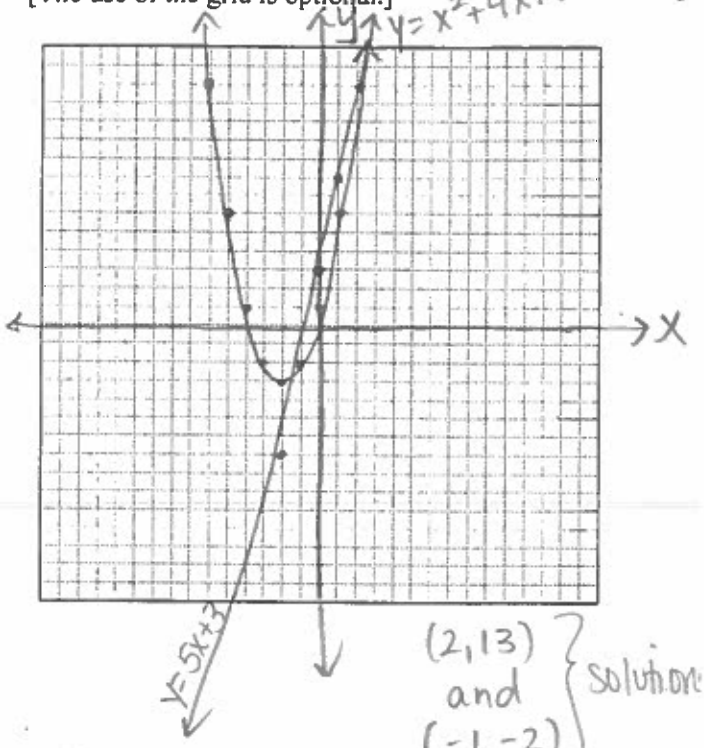


(-2,-1) and (3,14) } solutions

3 Solve the following system of equations:

$$y = x^2 + 4x + 1$$
$$y = 5x + 3$$

[The use of the grid is optional.]



(2,13) and (-1,-2) } solutions

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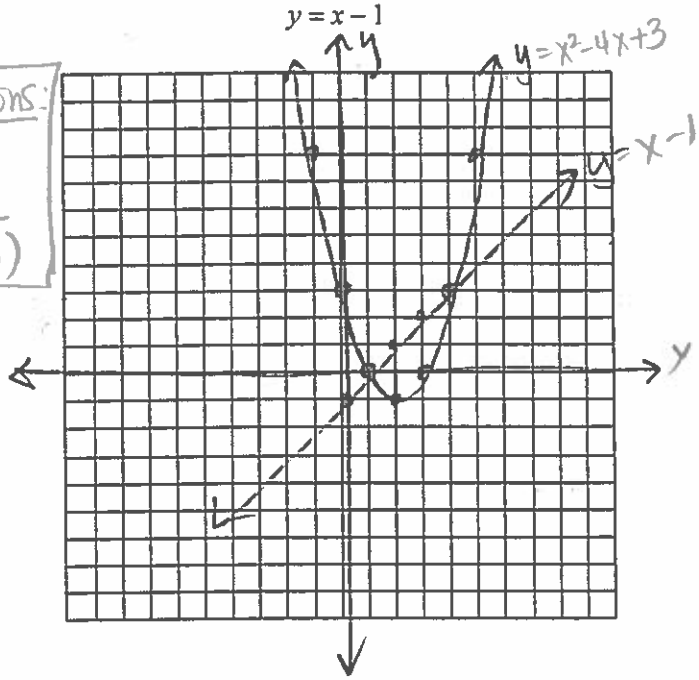
4 Solve the following system of equations algebraically or graphically for x and y:

$$y = x^2 - 4x + 3$$

$$y = x - 1$$

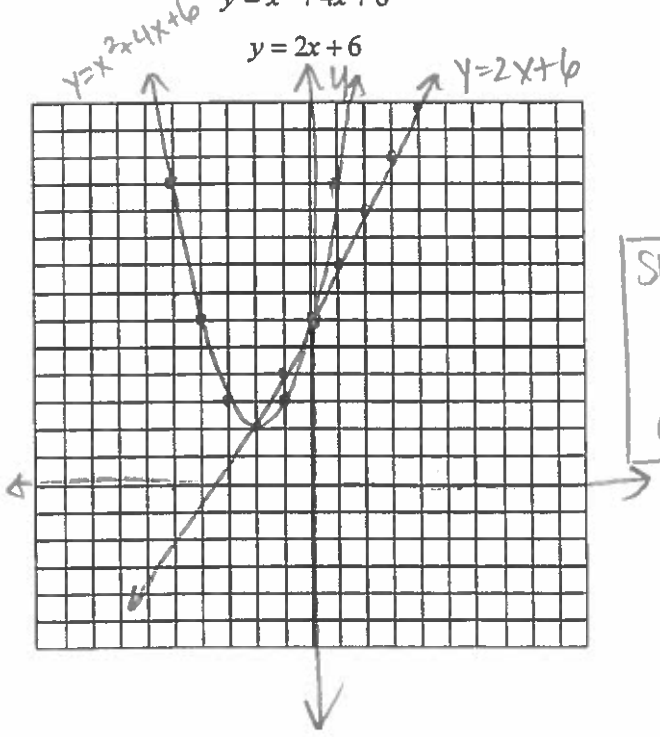


Solutions: (1,0) and (4,3)

5 Solve the following system of equations algebraically or graphically for x and y:

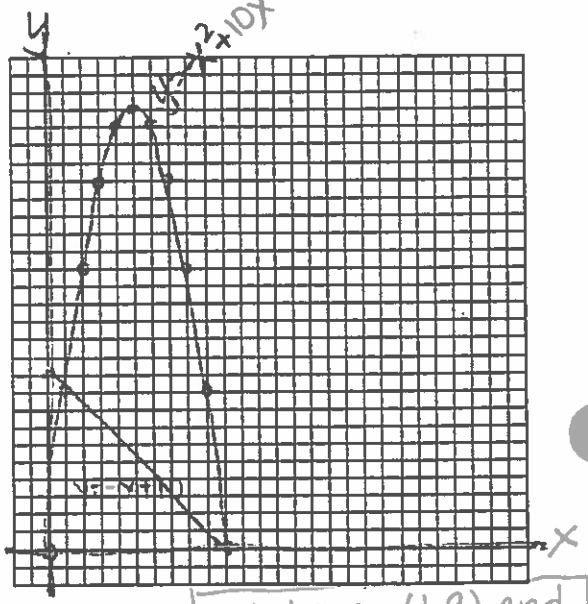
$$y = x^2 + 4x + 6$$

$$y = 2x + 6$$



Solutions: (-2,2) and (0,6)

6 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.



Solutions: (1,9) and (10,0)