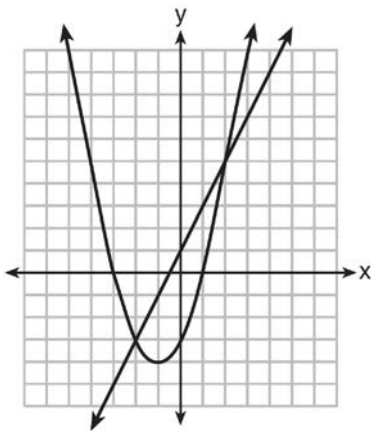


G.G.70: Quadratic-Linear Systems: Solve systems of equations involving one linear equation and one quadratic equation graphically

- 1 What is the solution of the system of equations graphed below?

$$y = 2x + 1$$

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

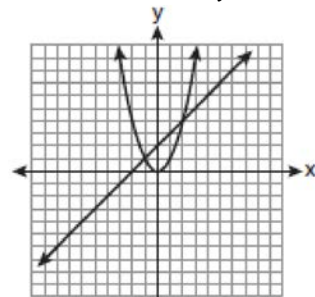


- 1) $(0, -3)$
- 2) $(-1, -4)$
- 3) $(-3, 0)$ and $(1, 0)$
- 4) $(-2, -3)$ and $(2, 5)$

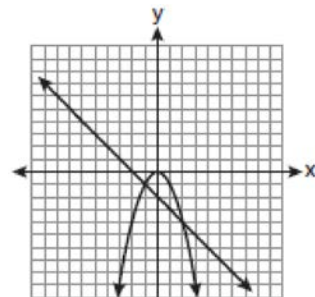
- 2 Which graph could be used to find the solution to the following system of equations?

$$y = -x + 2$$

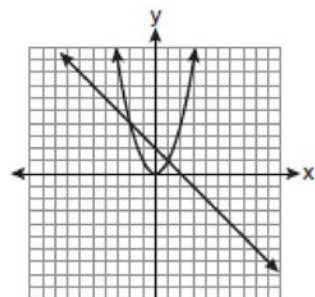
$$y = x^2$$



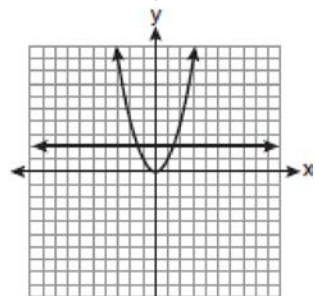
1)



2)



3)

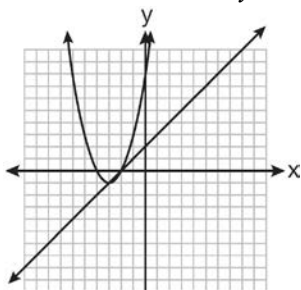


4)

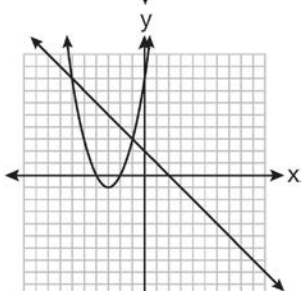
- 3 Which graph could be used to find the solution to the following system of equations?

$$y = (x + 3)^2 - 1$$

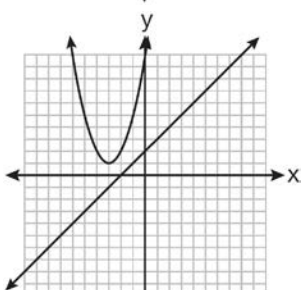
$$x + y = 2$$



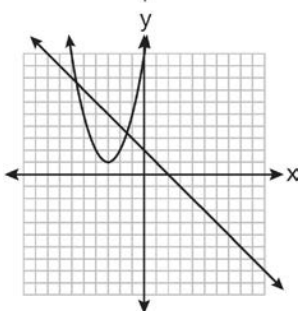
1)



2)



3)



4)

- 4 Given the system of equations: $y = x^2 - 4x$
 $x = 4$

The number of points of intersection is

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

- 5 When the system of equations $y + 2x = x^2$ and $y = x$ is graphed on a set of axes, what is the total number of points of intersection?

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

- 6 The solution of the system of equations $y = x^2 - 2$ and $y = x$ is

- 1) (1, 1) and (-2, -2)
- 2) (2, 2) and (-1, -1)
- 3) (1, 1) and (2, 2)
- 4) (-2, -2) and (-1, -1)

- 7 What is the solution of the system of equations $y - x = 5$ and $y = x^2 + 5$?

- 1) (0, 5) and (1, 6)
- 2) (0, 5) and (-1, 6)
- 3) (2, 9) and (-1, 4)
- 4) (-2, 9) and (-1, 4)

- 8 When solved graphically, what is the solution to the following system of equations?

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

$$y = x + 2$$

- 1) (1, 4)
- 2) (4, 6)
- 3) (1, 3) and (4, 6)
- 4) (3, 1) and (6, 4)

- 9 The equations $y = 2x + 3$ and $y = -x^2 - x + 1$ are graphed on the same set of axes. The coordinates of a point in the solution of this system of equations are

- 1) $(0, 1)$
- 2) $(1, 5)$
- 3) $(-1, -2)$
- 4) $(-2, -1)$

- 10 Given the equations: $y = x^2 - 6x + 10$

$$y + x = 4$$

What is the solution to the given system of equations?

- 1) $(2, 3)$
- 2) $(3, 2)$
- 3) $(2, 2)$ and $(1, 3)$
- 4) $(2, 2)$ and $(3, 1)$

- 11 What is the solution of the following system of equations?

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

$$y = 2x + 5$$

- 1) $(0, -4)$
- 2) $(-4, 0)$
- 3) $(-4, -3)$ and $(0, 5)$
- 4) $(-3, -4)$ and $(5, 0)$

- 12 When the system of equations $y + 2 = (x - 4)^2$ and $2x + y - 6 = 0$ is solved graphically, the solution is

- 1) $(-4, -2)$ and $(-2, 2)$
- 2) $(4, -2)$ and $(2, 2)$
- 3) $(-4, 2)$ and $(-6, 6)$
- 4) $(4, 2)$ and $(6, 6)$

- 13 Given: $y = \frac{1}{4}x - 3$

$$y = x^2 + 8x + 12$$

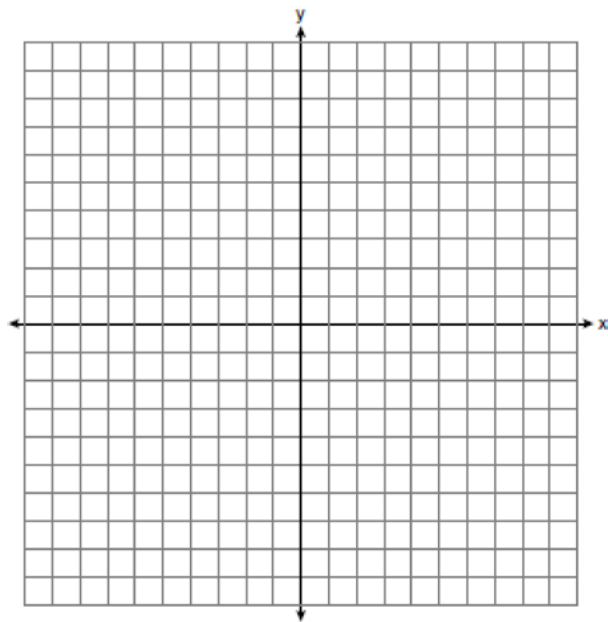
In which quadrant will the graphs of the given equations intersect?

- 1) I
- 2) II
- 3) III
- 4) IV

- 14 Solve the following system of equations graphically. State the coordinates of all points in the solution.

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

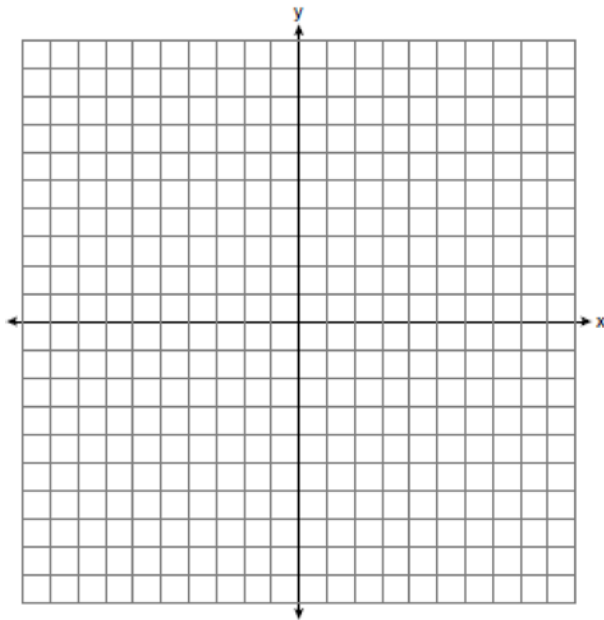
$$x + y = 5$$



- 15 Solve the following system of equations graphically.

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

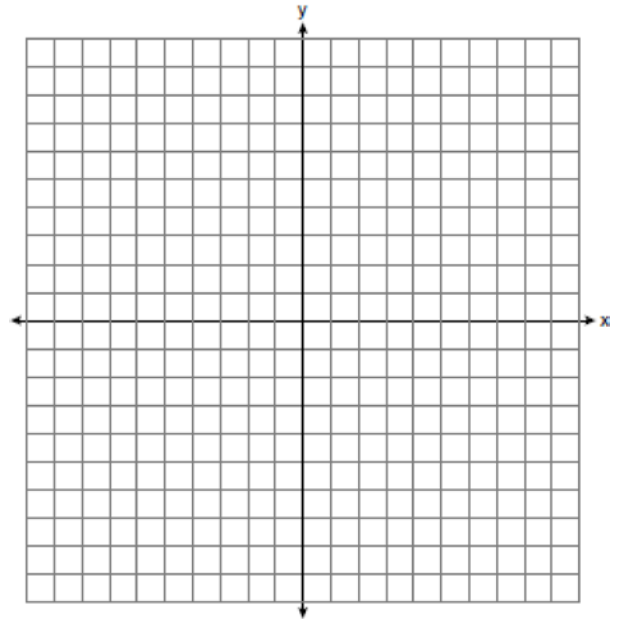
$$x + y = 1$$



- 17 On the set of axes below, solve the system of equations graphically and state the coordinates of all points in the solution.

$$y = (x - 2)^2 - 3$$

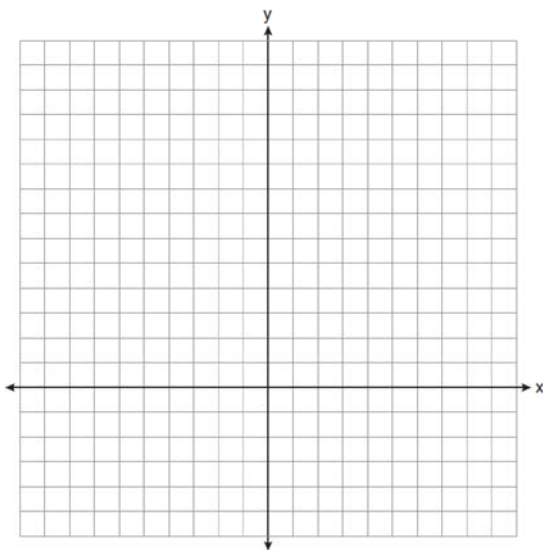
$$2y + 16 = 4x$$



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

$$y = (x - 2)^2 + 4$$

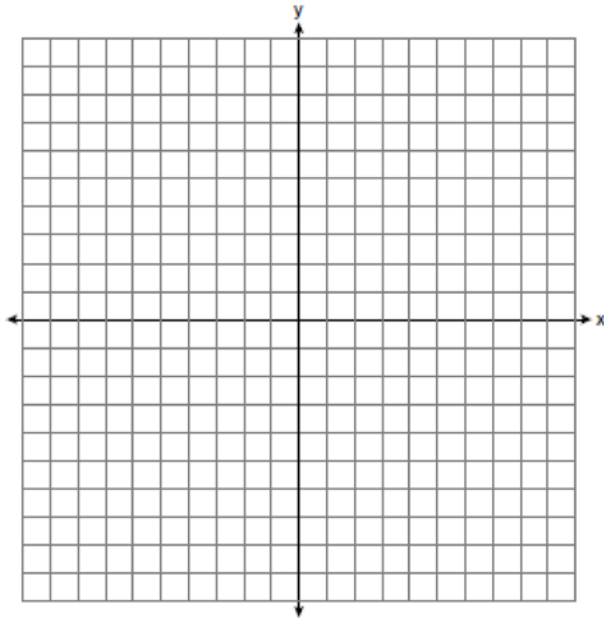
$$4x + 2y = 14$$



- 18 The equations $x^2 + y^2 = 25$ and $y = 5$ are graphed on a set of axes. What is the solution of this system?

- 1) $(0,0)$
- 2) $(5,0)$
- 3) $(0,5)$
- 4) $(5,5)$

- 19 a On the set of axes provided below, sketch a circle with a radius of 3 and center at $(2, 1)$ and also sketch the graph of the line $2x + y = 8$.

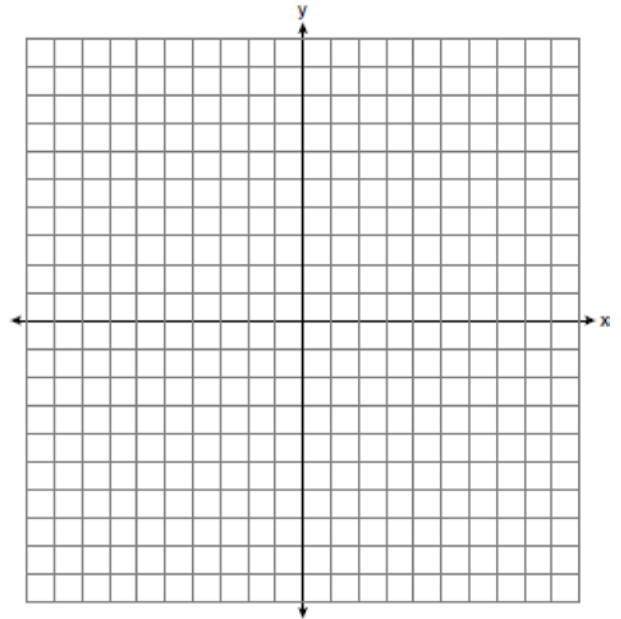


- b What is the total number of points of intersection of the two graphs?

- 20 On the set of axes below, solve the following system of equations graphically and state the coordinates of *all* points in the solution.

$$(x + 3)^2 + (y - 2)^2 = 25$$

$$2y + 4 = -x$$



G.G.70: Quadratic-Linear Systems: Solve systems of equations involving one linear equation and one quadratic equation graphically
Answer Section

- 1 ANS: 4 REF: 011501ge
 2 ANS: 3 REF: fall0805ge
 3 ANS: 2 REF: 061313ge
 4 ANS: 1 REF: 060923ge
 5 ANS: 2

$$x + 2x = x^2 \quad (0,0), (3,3)$$

$$0 = x^2 - 3x$$

$$0 = x(x - 3)$$

$$x = 0, 3$$

REF: 060923ge

- 6 ANS: 2
 $x^2 - 2 = x$

$$x^2 - x - 2 = 0$$

$$(x - 2)(x + 1) = 0$$

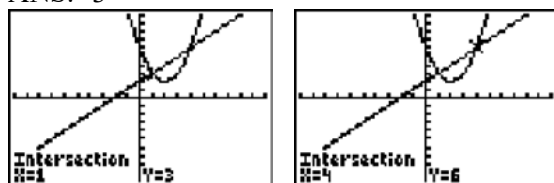
$$x = 2, -1$$

REF: 011409ge

- 7 ANS: 1
 $x^2 + 5 = x + 5 \quad y = (0) + 5 = 5$
 $x^2 - x = 0 \quad y = (1) + 5 = 6$
 $x(x - 1) = 0$
 $x = 0, 1$

REF: 081406ge

- 8 ANS: 3



REF: 081118ge

9 ANS: 4

$$2x + 3 = -x^2 - x + 1 \quad y = 2(-2) + 3 = -1$$

$$x^2 + 3x + 2 = 0$$

$$(x + 2)(x + 1) = 0$$

$$x = -2, -1$$

REF: 081516ge

10 ANS: 4

REF: 080912ge

11 ANS: 3

$$(x + 3)^2 - 4 = 2x + 5$$

$$x^2 + 6x + 9 - 4 = 2x + 5$$

$$x^2 + 4x = 0$$

$$x(x + 4) = 0$$

$$x = 0, -4$$

REF: 081004ge

12 ANS: 2

$$(x - 4)^2 - 2 = -2x + 6 \quad y = -2(4) + 6 = -2$$

$$x^2 - 8x + 16 - 2 = -2x + 6 \quad y = -2(2) + 6 = 2$$

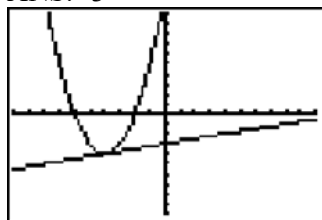
$$x^2 - 6x + 8 = 0$$

$$(x - 4)(x - 2) = 0$$

$$x = 4, 2$$

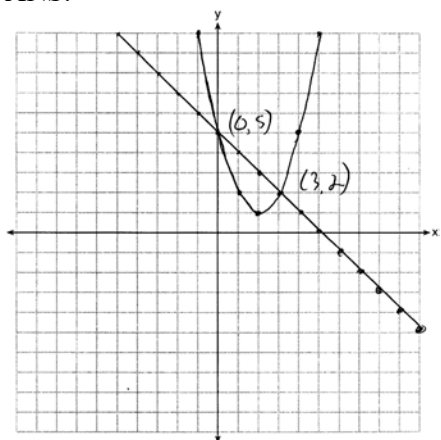
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13 ANS: 3



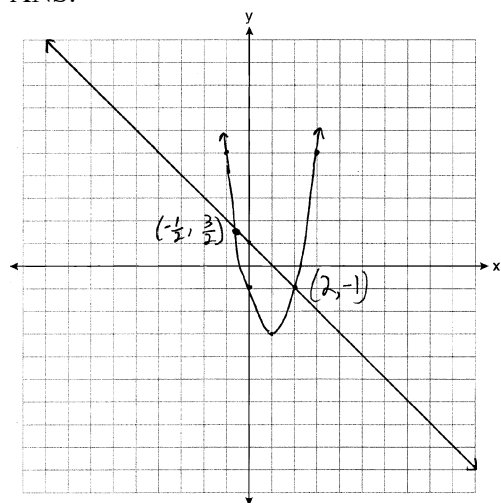
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14 ANS:



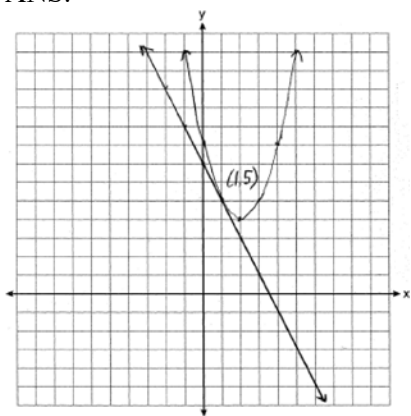
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15 ANS:



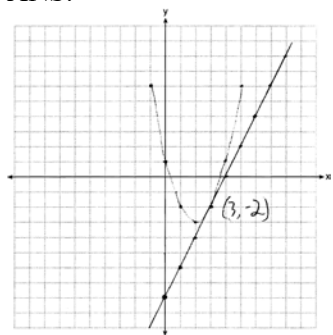
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16 ANS:



REF: 011038ge

17 ANS:



REF: 061238ge

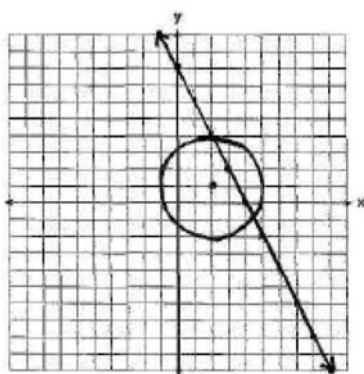
18 ANS: 3

$$x^2 + 5^2 = 25$$

$$x = 0$$

REF: 011312ge

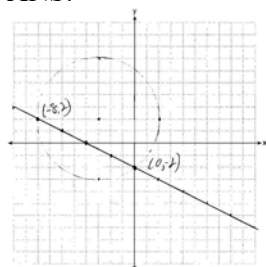
19 ANS:



a) ; b) 2

REF: 010029a

20 ANS:



REF: 081237ge