# A.REI.C.7: Quadratic-Linear Systems 3

1 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

2 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

3 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

4 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 $(-1,-1)$

5 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 $(6,4)$

6 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 $(-1,4)$

7 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 $(3,1)$

8 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) $(-2,-1)$

9 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 $(6,6)$

10 What is the solution of the following system of equations?

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

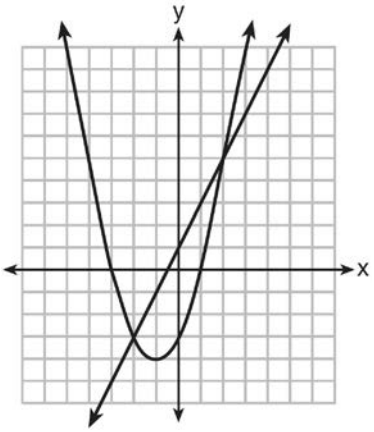
$y = 2x + 5$

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

11 What is the solution of the system of equations graphed below?

$$y = 2x + 1$$

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

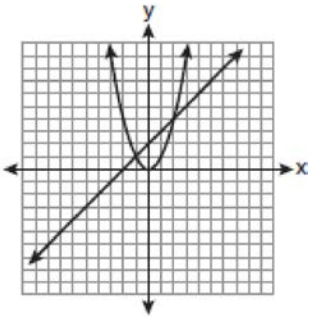



1) $(0,-3)$
2) $(-1,-4)$
3) $(-3,0)$ and $(1,0)$
4) $(-2,-3)$ and $(2,5)$

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

$$y = -x + 2$$

$$y = x^2$$

1)
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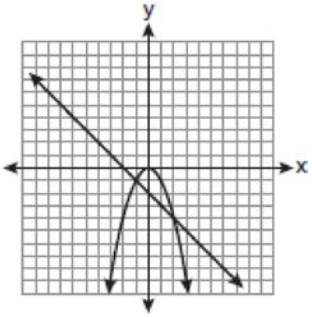


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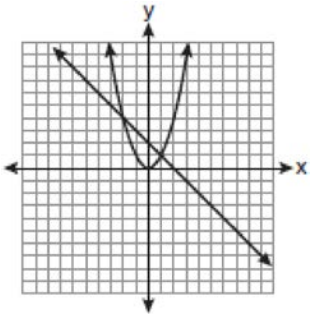


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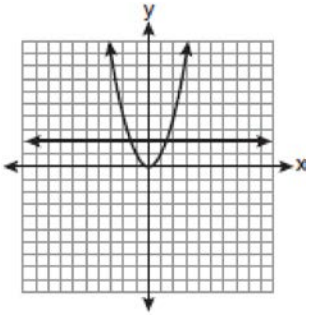
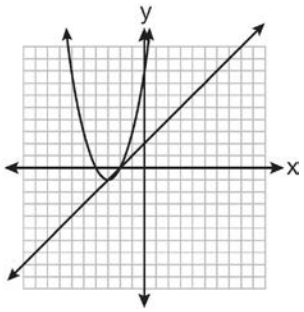


13 Which graph could be used to find the solution to the following system of equations?

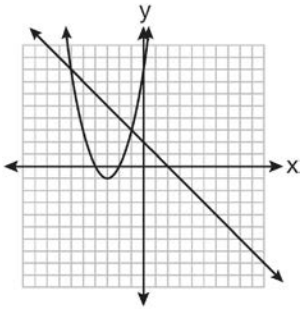
$$y = (x+3)^2 - 1$$

$$x + y = 2$$

1)




2)

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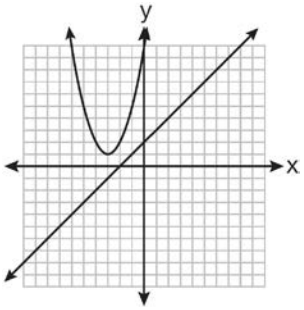


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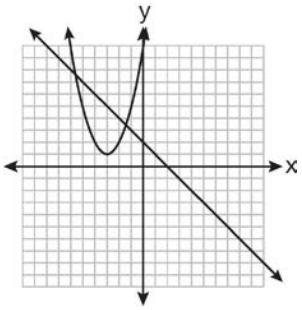
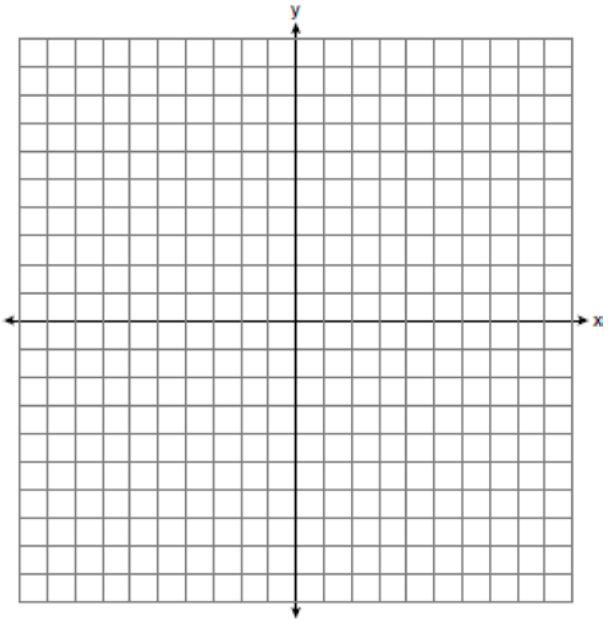



14 On the set of axes below, solve the following system of equations graphically and state the coordinates of all points in the solution.

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

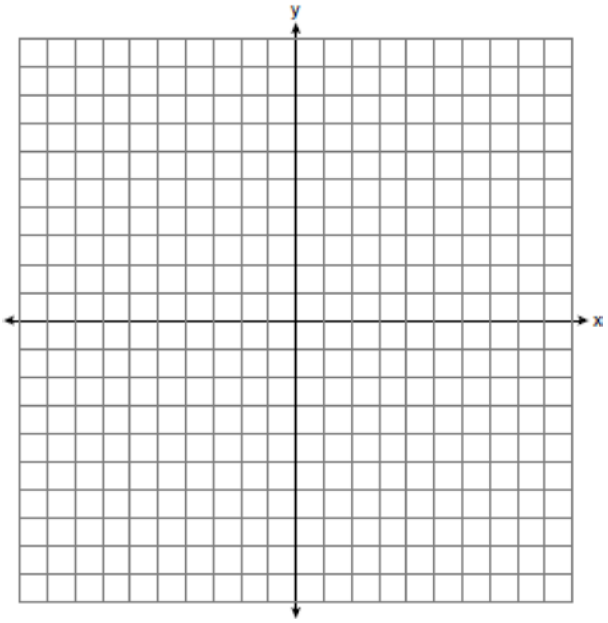
$$y - 2x = 5$$



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

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

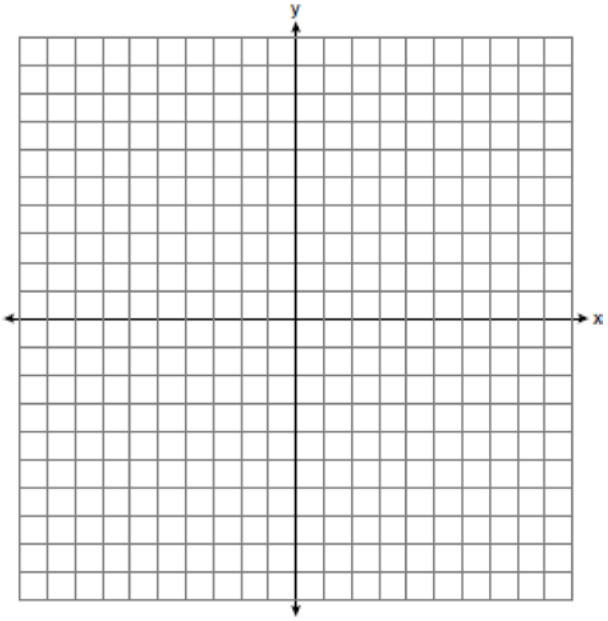
$$x + y = 5$$




16 Solve the following system of equations graphically.

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

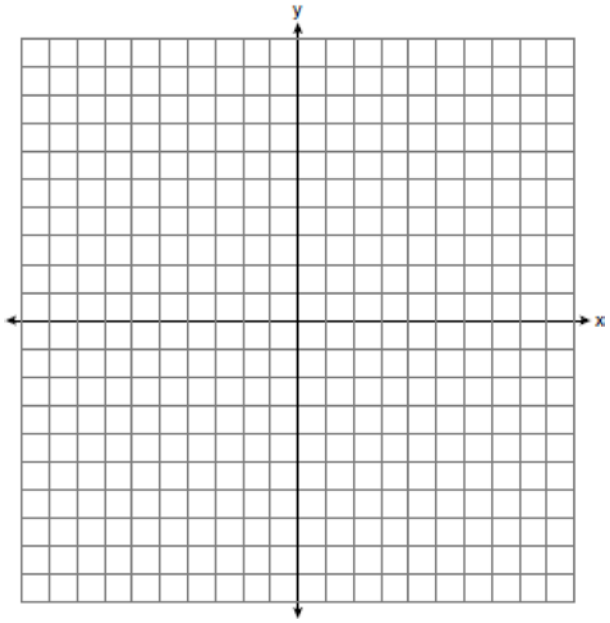
$$x + y = 1$$




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

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

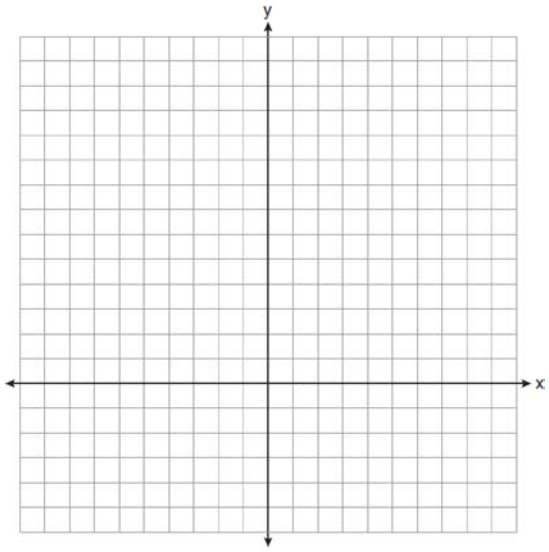
$$2y + 16 = 4x$$




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

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

$$4x + 2y = 14$$



# A.REI.C.7: Quadratic-Linear Systems 3
## Answer Section

1 ANS: 2

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

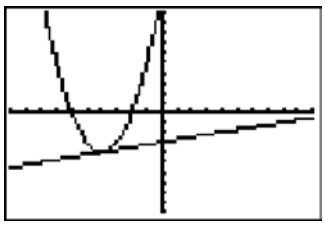
$0 = x^2 - 3x$

$0 = x(x-3)$

$x = 0,3$

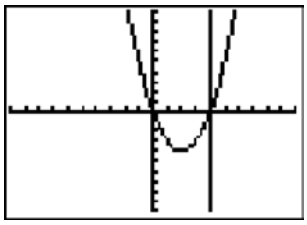
REF: 061406ge

2 ANS: 3



REF: 061011ge

3 ANS: 1



$y = x^2 - 4x = (4)^2 - 4(4) = 0$. $(4,0)$ is the only intersection.

REF: 060923ge

4 ANS: 2

$x^2 - 2 = x$

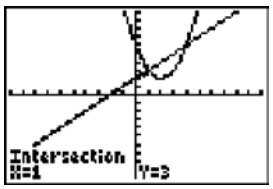
$x^2 - x - 2 = 0$

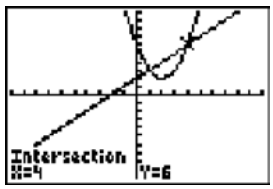
$(x-2)(x+1) = 0$

$x = 2, -1$

REF: 011409ge

5 ANS: 3




REF: 081118ge

6 ANS: 1

$x^2 + 5 = x + 5 \quad y = (0) + 5 = 5$

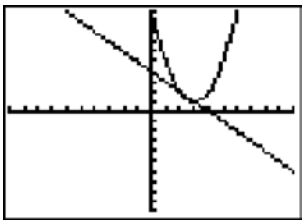
$x^2 - x = 0 \qquad y = (1) + 5 = 6$

$x(x-1) = 0$

$x = 0, 1$

REF: 081406ge

7 ANS: 4



$y + x = 4$ . $x^2 - 6x + 10 = -x + 4$. $y + x = 4$. $y + 2 = 4$

$y = -x + 4 \qquad x^2 - 5x + 6 = 0 \qquad y + 3 = 4 \qquad y = 2$

$(x-3)(x-2) = 0 \qquad y = 1$

$x = 3$ or 2

REF: 080912ge

8 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

9 ANS: 2

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

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

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

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

$x = 4, 2$

REF: 081319ge

10 ANS: 3

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

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

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

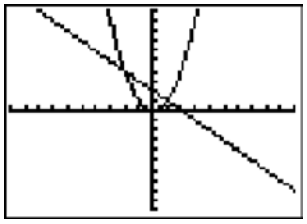
$$x(x+4) = 0$$

$$x = 0, -4$$

REF: 081004ge

11 ANS: 4 REF: 011501ge

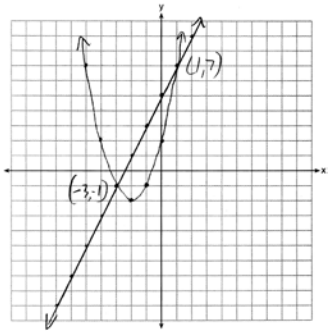
12 ANS: 3



REF: fall0805ge

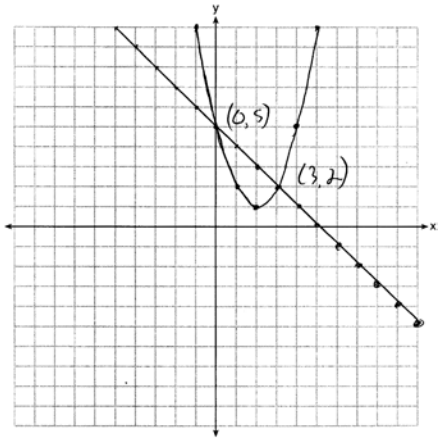
13 ANS: 2 REF: 061313ge

14 ANS:




REF: 011636ge

15 ANS:

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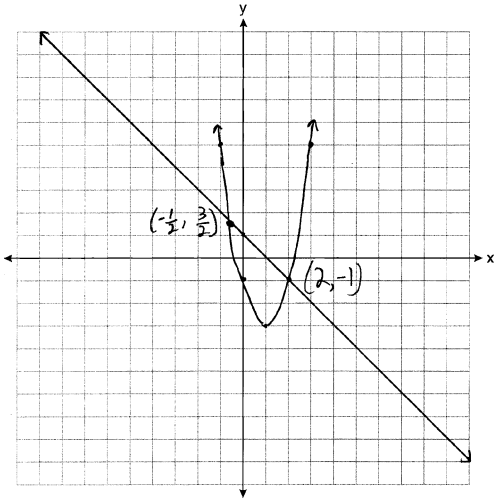
16 ANS:

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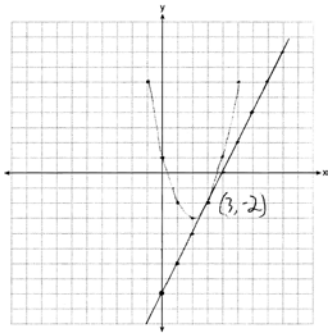
17 ANS:

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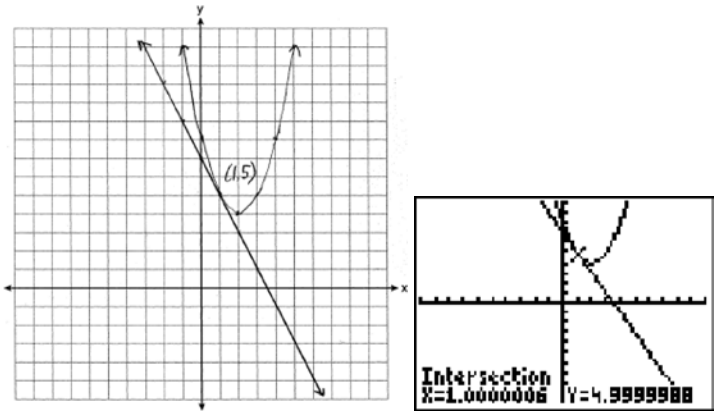
18 ANS:

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