

A.REI.C.7: Quadratic-Linear Systems 1

- 1 A quadratic function and a linear function are graphed on the same set of axes. Which situation is *not* possible?
- 1) The graphs do not intersect.
 - 2) The graphs intersect in one point.
 - 3) The graphs intersect in two points.
 - 4) The graphs intersect in three points.

- 2 Solve the systems of equations algebraically for all values of x and y :

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

$$y = 2x + 7$$

- 3 Solve the following system of equations algebraically for all values of x and y :

$$y = x^2 - 7x + 12$$

$$y = 2x - 6$$

- 4 Solve the following systems of equations algebraically for all values of x and y :

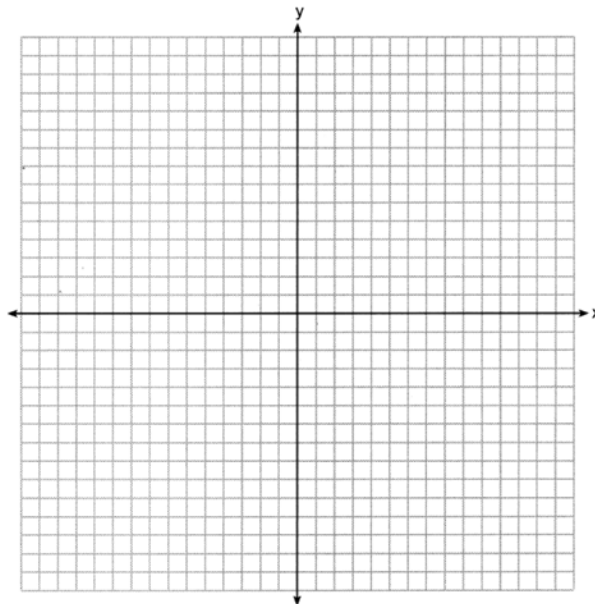
$$y = x^2 + 5x - 17$$

$$x - y = 5$$

- 5 Graph the following system of equations on the set of axes below.

$$y = x^2 - 3x - 6$$

$$y = x - 1$$

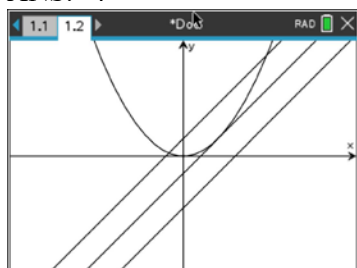


State the coordinates of all solutions.

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Answer Section

1 ANS: 4



REF: 062216ai

2 ANS:

$$x^2 + 4x - 1 = 2x + 7 \quad y = 2(-4) + 7 = -1 \quad (-4, -1), (2, 11)$$

$$x^2 + 2x - 8 = 0 \quad y = 2(2) + 7 = 11$$

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

$$x = -4, 2$$

REF: 082434ai

3 ANS:

$$x^2 - 7x + 12 = 2x - 6 \quad y = 2(6) - 6 = 6 \quad (6, 6), (3, 0)$$

$$x^2 - 9x + 18 = 0 \quad y = 2(3) - 6 = 0$$

$$(x - 6)(x - 3) = 0$$

$$x = 6, 3$$

REF: 012534ai

4 ANS:

$$x^2 + 5x - 17 = x - 5 \quad -6 - y = 5 \quad 2 - y = 5 \quad (-6, -11), (2, -3)$$

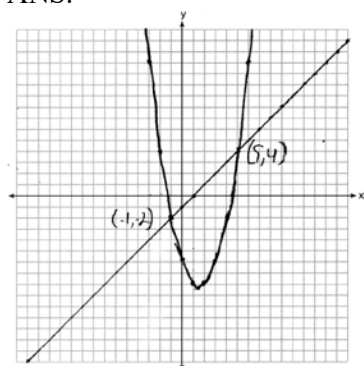
$$x^2 + 4x - 12 = 0 \quad y = -11 \quad y = -3$$

$$(x + 6)(x - 2) = 0$$

$$x = -6, 2$$

REF: fall2305ai

5 ANS:



REF: 062431ai