

A.A.10: Solving Linear Systems 4: Solve systems of two linear equations in two variables algebraically

- 1 What is the value of y in the following system of equations?

$$2x + 3y = 6$$

$$2x + y = -2$$

- 2 If $a + 3b = 13$ and $a + b = 5$, the value of b is

- 3 If $x + y = -10$ and $x - y = 2$, what is the value of x ?

- 4 Which ordered pair is the solution of the following system of equations?

$$3x + 2y = 4$$

$$-2x + 2y = 24$$

- 5 Which ordered pair satisfies the system of equations below?

$$3x - y = 8$$

$$x + y = 2$$

- 6 What point is the intersection of the graphs of the lines $2x - y = 3$ and $x + y = 3$?

- 7 When solved graphically, which system of equations will have exactly one point of intersection?

1) $y = -x - 20$

$$y = x + 17$$

2) $y = 0.5x + 30$

$$y = 0.5x - 30$$

3) $y = \frac{3}{5}x + 12$

$$y = 0.6x - 19$$

4) $y = -x + 15$

$$y = -x + 25$$

A.A.10: Solving Linear Systems 4: Solve systems of two linear equations in two variables algebraically

Answer Section

1 ANS:

4

$$2x + 3y = 6$$

$$2x + y = -2$$

$$2y = 8$$

$$y = 4$$

REF: 080013a

2 ANS:

4

$$a + 3b = 13$$

$$a + b = 5$$

$$2b = 8$$

$$b = 4$$

REF: 080706a

3 ANS:

-4

$$x + y = -10$$

$$x - y = 2$$

$$2x = -8$$

$$x = -4$$

REF: 060824a

4 ANS:

$(-4, 8)$

$$3x + 2y = 4 \quad . \quad 3x + 2y = 4$$

$$-2x + 2y = 24 \quad 3(-4) + 2y = 4$$

$$5x = -20 \quad -12 + 2y = 4$$

$$x = -4 \quad y = 8$$

REF: 060007a

5 ANS:

 $(2.5, -0.5)$

$$3x - y = 8$$

$$x + y = 2 \quad 2.5 + y = 2$$

$$4x = 10 \quad y = -0.5$$

$$x = 2.5$$

REF: 060716a

6 ANS:

 $(2, 1)$

$$2x - y = 3 \quad x + y = 3$$

$$x + y = 3 \quad 2 + y = 3$$

$$3x = 6 \quad y = 1$$

$$x = 2$$

REF: 080429a

7 ANS: 1

In (2) – (4), the equations in each system have equal slope, and therefore do not intersect.

REF: 080529a