Algebra: Solving Linear Systems by Graphing

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Name: _____ Date: _____ Score: _____

DIRECTIONS *Identify the solution (intersection point) of each system. Write as an ordered pair, or state "No Solution" or "Infinitely Many."*

1 Solve by graphing:

$$y = x + 1$$
$$y = -x + 3$$

Answer: _____

2 Solve by graphing:

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

Answer: _____

3 Solve by graphing:

$$y = 3x$$
$$y = x + 4$$

Answer: _____

4 Solve by graphing:

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

Answer: _____

5 Solve by graphing:

$$y = 2x + 1$$
$$y = 2x - 3$$

Answer: _____

6 Solve by graphing:

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

Answer: _____

7 Solve by graphing:

$$y = -x + 5$$
$$y = 2x - 1$$

Answer: _____

8 Solve by graphing:

$$y = (1/2)x + 1$$
$$y = x - 1$$

Answer: _____

9 Solve by graphing:

$$y = 3x - 2$$
$$y = 3x - 2$$

Answer: _____

10 Solve by graphing:

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

Answer: _____

Answer Key & Solutions

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TEACHER NOTES *Graph both lines using slope-intercept form. Intersection = solution. Parallel lines = no solution. Same line = infinite*

ly many.

1 y=x+1 and y=-x+3

= (1, 2)

Set equal: x+1=-x+3, 2x=2, x=1, y=2

2 y=2x-1 and y=x+1

= (2, 3)

2x-1=x+1, x=2, y=3

3 y=3x and y=x+4

= (2, 6)

3x=x+4, 2x=4, x=2, y=6

4 y=x-2 and y=-2x+4

= (2, 0)

x-2=-2x+4, 3x=6, x=2, y=0

5 y=2x+1 and y=2x-3

= No Solution

Same slope, different y-int → parallel lines

6 y=x+2 and y=-x+6

= (2, 4)

x+2=-x+6, 2x=4, x=2, y=4

7 y=-x+5 and y=2x-1

= (2, 3)

-x+5=2x-1, 6=3x, x=2, y=3

8 y=1/2x+1 and y=x-1

= (4, 3)

1/2x+1=x-1, 2=1/2x, x=4, y=3

9 y=3x-2 and y=3x-2

= Infinitely Many

Identical equations → same line

10 y=-2x+4 and y=x-2

= (2, 0)

-2x+4=x-2, 6=3x, x=2, y=0