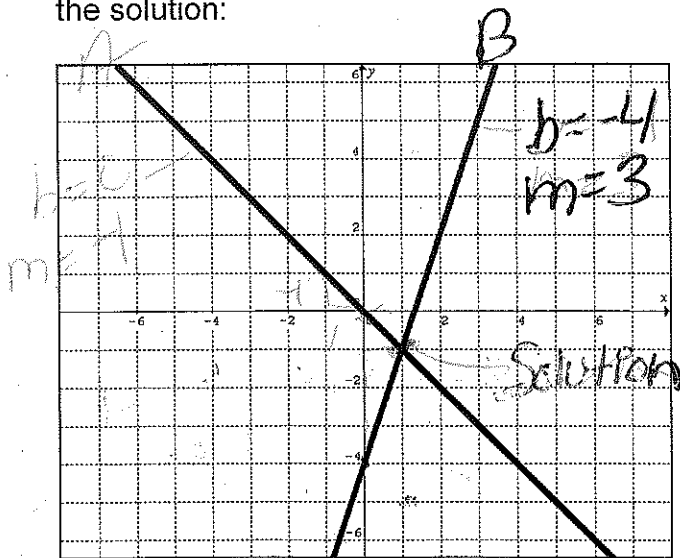


INTRO TO SYSTEMS OF EQUATIONS

- A system of equations is 2 or more equations graphed on the same coordinate plane.
- The solution to a system of equations is the POINT(S) that the lines share.
- When two lines lie on the same coordinate plane they can:
  - intersect in which case their solution is one point
  - be parallel in which case their solution is No Solution
  - be the same line in which case their solution is infinitely many solutions

4. Write the system of equations and state the solution:

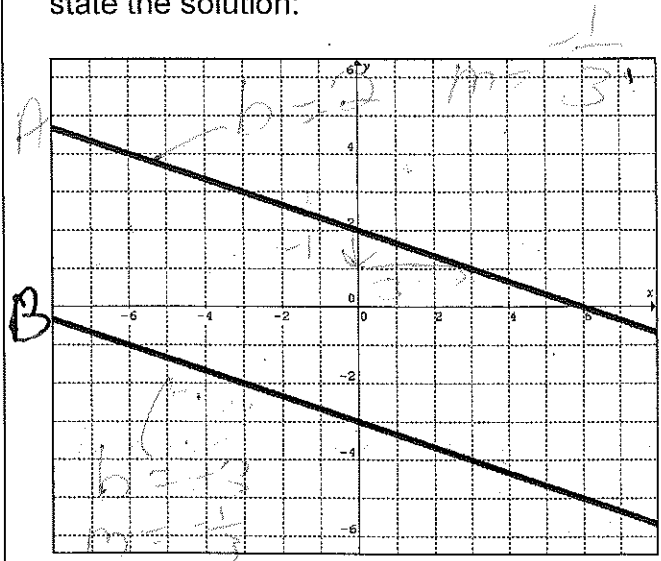


System: (what are the 2 equations shown?)

$$\left. \begin{array}{l} A \quad y = -x \\ B \quad y = 3x - 4 \end{array} \right\}$$

Solution:  $(1, -1)$

5. Write the system of equations and state the solution:



System:

$$\left. \begin{array}{l} A \quad y = -\frac{1}{3}x + 2 \\ B \quad y = -\frac{1}{3}x - 3 \end{array} \right\}$$

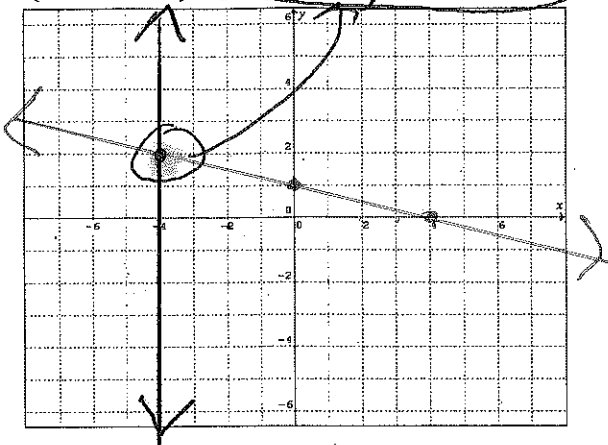
Solution: No Solution

rise ↓  
run ←

6. Graph the system and state the solution:

$$\begin{cases} y = -\frac{1}{4}x + 1 \\ x = -4 \end{cases}$$

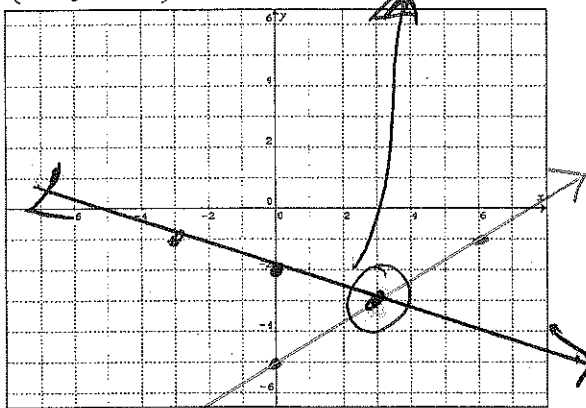
$(-4, 2)$



7. Graph the system and state the solution:

$$\begin{cases} y = -\frac{1}{3}x - 2 \\ y = \frac{2}{3}x - 5 \end{cases}$$

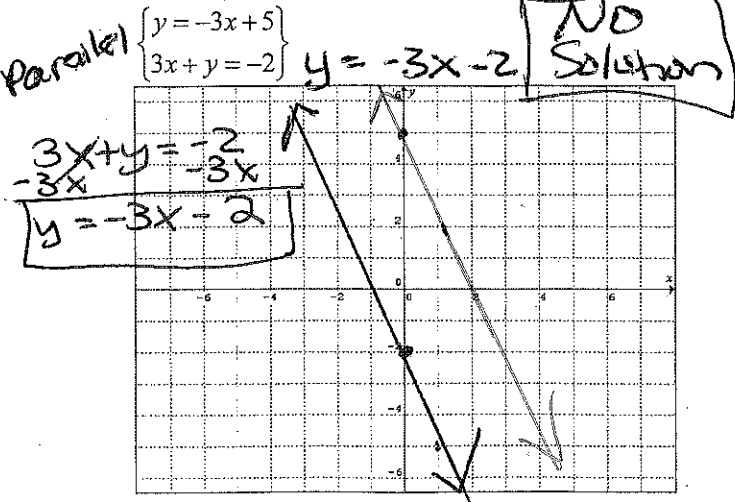
$(3, -3)$



8. Graph the system and state the solution:

$$\begin{cases} y = -3x + 5 \\ 3x + y = -2 \end{cases}$$

No Solution

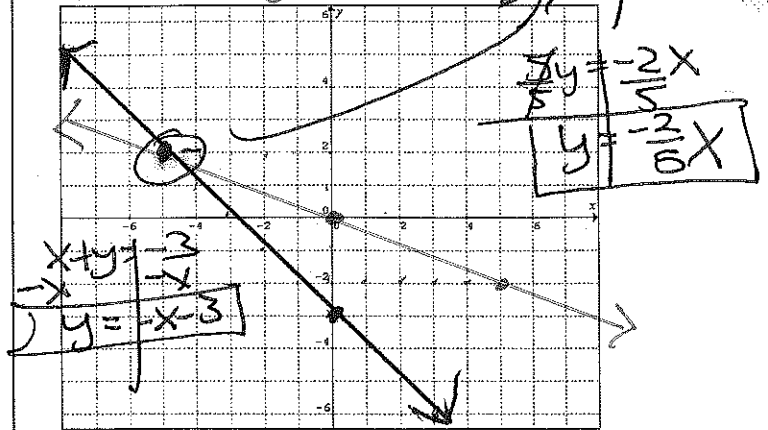


9. Graph the system and state the solution:

$$\begin{cases} x + y = -3 \\ 5y = -2x \end{cases}$$

$$\begin{cases} y = -x - 3 \\ y = -\frac{2}{5}x \end{cases}$$

$(-5, 2)$

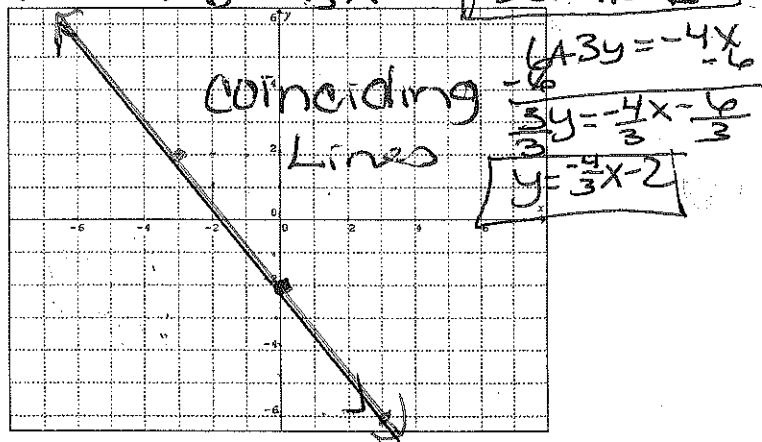


10. Graph the system and state the solution:

$$\begin{cases} y = -\frac{4}{3}x - 2 \\ 6 + 3y = -4x \end{cases}$$

$$y = -\frac{4}{3}x - 2$$

Infinitely Many Solutions



11. Graph the system and state the solution:

$$\begin{cases} x + 2y = 10 \\ 2 = 3x - y \end{cases}$$

$$\begin{cases} y = -\frac{1}{2}x + 5 \\ y = 3x - 2 \end{cases}$$

$(2, 4)$

