Name: _____ Date: _____

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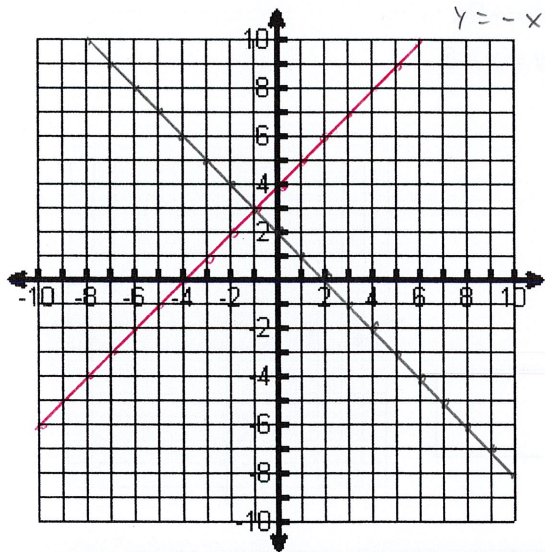# Solving Systems by Graphing

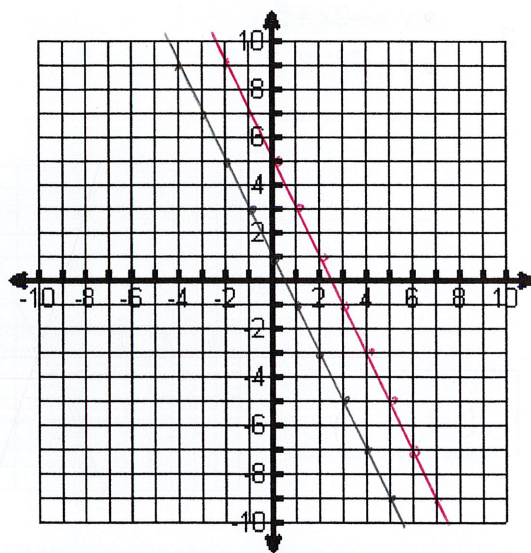| Steps |
|---|
| 1. Make sure each equation is in slope-intercept form: **y = mx + b**. |
| 2. **Graph** each equation on the same graph. |
| 3. The point where the **lines intersect** is the solution. If they don't intersect then there's no solution. |
| 4. **Check your solution** algebraically! |

**(-1, 3)** 1. $2x - 2y = -8$
$2x + 2y = 4$

$-2y = -2x - 8$
$y = x + 4$

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



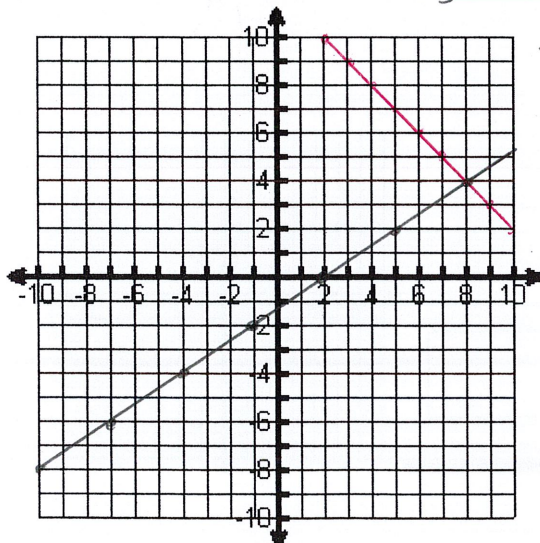**No Solution** 2. $y = -2x + 5$
$y = -2x + 1$



**(8, 4)** 3. $x + y = 12$
$2x - 3y = 4$

$y = -x + 12$

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

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

| x | y |
|---|---|
| 0 | -4/3 |
| 1 | -2/3 |
| 2 | 0 |

| X | Y |
|---|---|
| 0 | 12 |
| 1 | 11 |
| 2 | 10 |



**(-2, 5)** 4. $y = 5$
$2x + y = 1$

$2x + y = 1$
$y = -2x + 1$
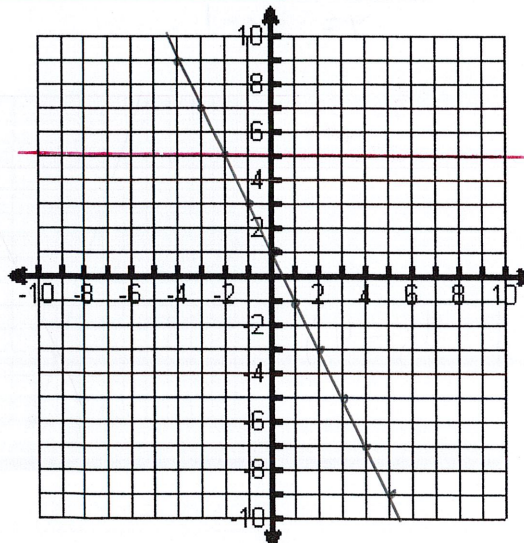
**Check whether the ordered pairs are solutions of the system:**

$$x - 2y = -10$$
$$2x + 3y = 1$$

1. **(-4, 3)**

$(-4) - 2(3) = -10$

$-4 - 6 = -10$ ✓

$2(-4) + 3(3) = 1$
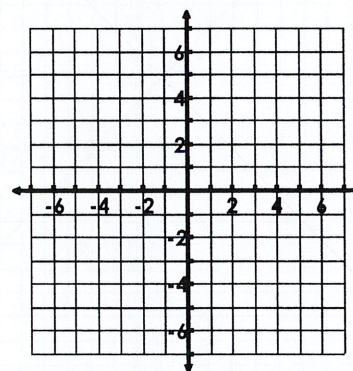
$-8 + 9 = 1$ ✓   **Yes**

2. **(0, 5)**

**Solve the System of Equations by Graphing. Write your final answer as an <u>Ordered Pair</u>.**
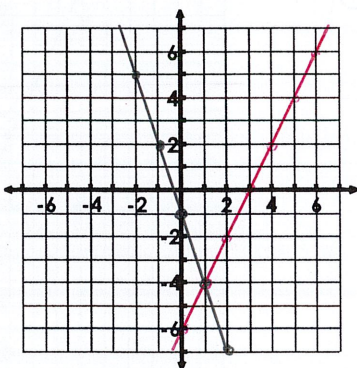
3.
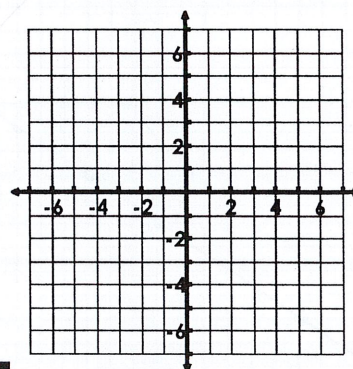$y = -3x + 5$
$y = 2x - 5$



$(2, -1)$

4.
$y = -2x$
$y = x + 3$



5.
$y = 2x - 6$
$3x + y = -1$

$\underline{\phantom{xx}-3x \phantom{xxxx} -3x}$

$y = -3x - 1$



$(1, -4)$

6.
$x + 2y = 6$
$3x - 2y = 2$