Workspace:

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

Name "Teacher" Date 4/25/18 Section 2R3

Methods for Solving Systems of Equations

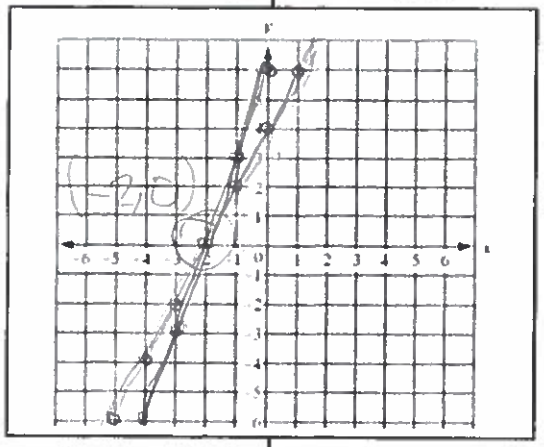
$$2x - y = -4$$
$$-3x + y = 6$$

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

Solution: (-2, 0)

Plug in!

GRAPHING



(-2, 0)

Intersecting Lines: one solution

Parallel Lines: NO solution

The Same Line: Infinite many solution

SUBSTITUTION

$y = (3x + 6) \quad 2x - y = -4$
$2x - (3x + 6) = -4$
$(2x - 3x) - 6 = -4$
$-1x - 6 = -4$
$+6 \quad +6$
$\frac{x}{-1} = \frac{2}{-1}$
$x = -2$

$y = 3(-2) + 6$
$y = -6 + 6$
$y = 0$
(-2

ELIMINATION

Cancel out

$2x - y = -4$
$-3x - y = 6$
$-x = 2$
$\frac{-x}{-1} = \frac{2}{-1}$
$x = -2$

$2(-2) - y = -4$
$-4 - y = -4$
$+4 \quad +4$
$\frac{-y}{-1} = \frac{0}{-1}$
$y = 0$

What if both of the variables cancel out? Look at the resulting mathematical statement.

* False statement indicates the lines are parallel so no solution.
* True statement indicates the lines are the same so infinite many solution.