Is the point (2, 3) a solution to this system of equations? Yes. (2,3) makes both equations true.

y = 2x - 1 → $3 = 2(2) - 1$ $3 = 3$ ✓

y = -4x + 11 → $3 = -4(2) + 11$

$-8 + 11$

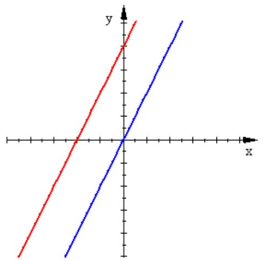
$3 = 3$ ✓

If two lines are graphed together, how many points of intersection can there be?

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

2. None

y = 2x and y = 2x + 8



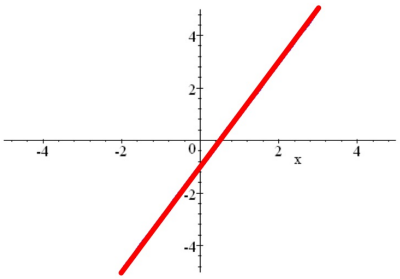
Lines are parallel

3. Infinitely Many

y = 2x - 1 and 8x - 4y = 4 →

$y = \frac{4 - 8x}{-4}$

$y = -1 + 2x$



They are the same line.

Without graphing how can you tell the number of solutions a system of equations will have?

Find the slope and y-intercept of each line to see if they are parallel, the same line, or will intersect at some point.

Number of solutions to systems of linear equations

# of Solutions	How do you tell without graphing
One Solution:	Lines have a different slope
No solution:	Parallel Lines • same slope • different y-intercept
Many Solutions:	Same lines • same slope • same y-intercept

How many solutions does each system of linear equations have?

1. $y = 2x - 7$
$4x - 8y = 24$
ONE
$y = \frac{24 - 4x}{-8}$
$m \neq 2$

2. $y = -3x + 1$
$6x + 2y = 8$
NONE
$y = \frac{8 - 6x}{2}$
$m = -3$
$b = 4$

3. $y = \frac{4}{5}x + 2$
ONE
$15x + 12y = 36$
$y = \frac{36 - 15x}{12}$
$m \neq \frac{4}{5}$

4. $y = -6x + 5$
$12x + 2y = 10$
MANY
$\frac{10 - 12x}{2}$
$m = -6$
$b = 5$

Sec 7-1:

Solving a System of Equations by graphing

- 1 sol, No sol, Many sol's

Hwk #14:

Sec 7-1

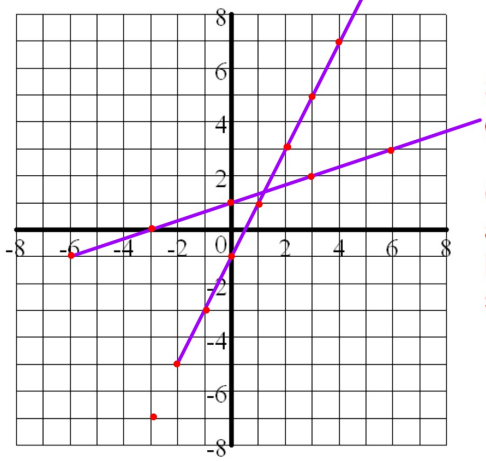
Pages 343 - 344

Problems 2, 8, 10, 11, 19-22

Use the sheet I've printed for you.

Solve this system of equations by graphing:

$y = 2x - 1$ $\quad y = \frac{1}{3}x + 1$



Solution is non-integer coordinates.

Graphing with paper and pencil isn't the best way to solve this system.

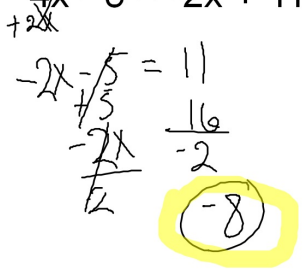
Find the solution to this system of linear equations by graphing.

$y = 2.1x - 6$

$y = -3.2x + 1$

Students were shown how to use the graphing calculator to solve a system of equations by graphing.

Solve: $-4x - 5 = -2x + 11$



This was practice for the kinds of skills necessary to solve a system of equations with Algebra.

Sec 7-2: Solving a system of equations using substitution

$y = 3x + 7$ $\qquad y = -x - 8$

$3x + 7 = -x - 8$

$+x \qquad +x$

$4x + 7 = -8$

$4x = -15$

$x = -3.75$

$y = -(3.75) - 8$

$3.75 - 8$

-4.25

$(-3.75, -4.25)$

Solve. $4x - 3(2x - 10) = 24$

$4x - 6x + 30 = 24$

$-30 \quad -30$

$\frac{-2x}{-2} = \frac{-6}{-2}$

$x = 3$

Solve this system of equations using SUBSTITUTION

$Y = 4X + 1$ $\qquad 5X + 3Y = 37$

$5X + 3(4X + 1) = 37$

$5X + 12X + 3 = 37$

$17X + 3 = 37$

$17X = 34 \quad X = 2$

$y = 4(2) + 1$

$(2, 9)$

Solve using substitution.

$y = -4x + 1$ $\qquad 6x - 2y = -44$

$6x - 2(-4x + 1) = -44$

$6x + 8x - 2 = -44$

$+2 \qquad +2$

$14x = -42$

$x = -3$

$y = -4(-3) + 1$

$12 + 1$

$(-3, 13)$