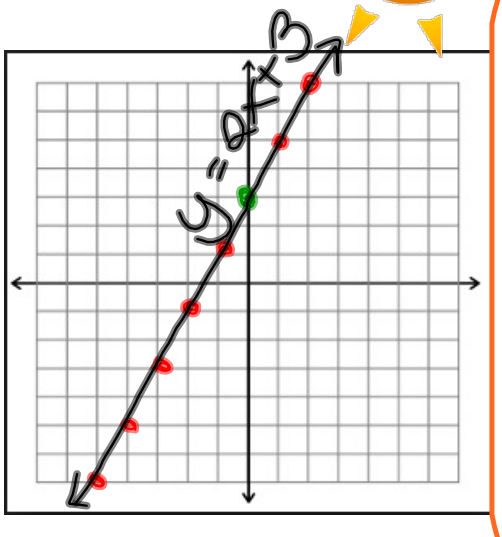
Warm Up:



Solve for y, then graph the function:

$$\frac{2y}{2} = \frac{4x}{2} + \frac{6}{2}$$

$y = 2x + 3$

slope

y-intercept

↑ 2

→ 1

Unit 5: Systems of Linear Equations

Systems of Linear Equations Solved Graphically

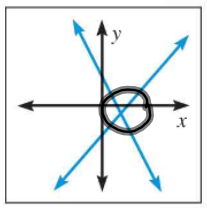
What is a "system" of equations?

2 equations solved @ same time for a common solution

What is the solution to a system of equations?

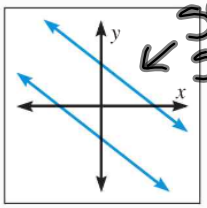
the point in common (where they cross)

CONCEPT SUMMARY NUMBER OF SOLUTIONS OF A LINEAR SYSTEM



Lines intersect
one solution

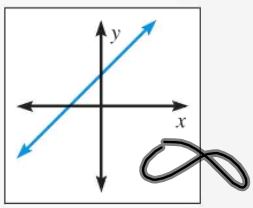
(x,y)



same slope

Lines are parallel
no solution

never intersect

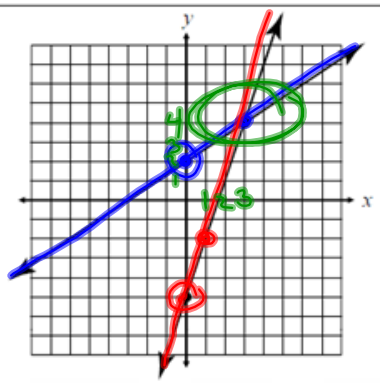


Lines coincide
infinitely many solutions
(the coordinates of every point on the line)

EXAMPLES

Directions: Write the system of equations and identify the solution.

1



System of Equations:

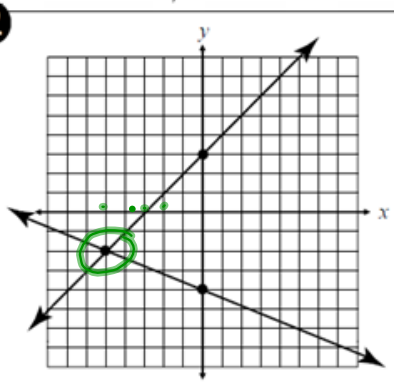
$y = \frac{3}{3}x + 2$

$y = \frac{3}{1}x - 5$

Solution: (3, 4)

where they cross

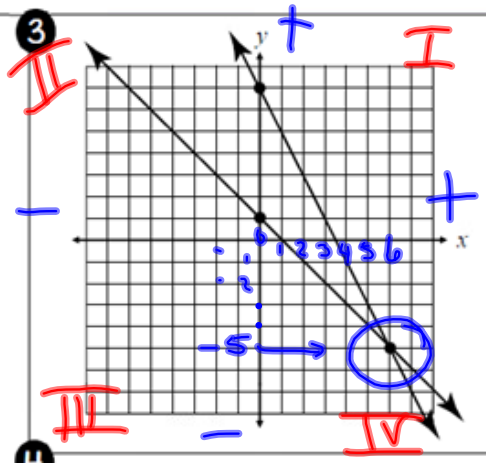
2



System of Equations:

Solution: (-5, -2)

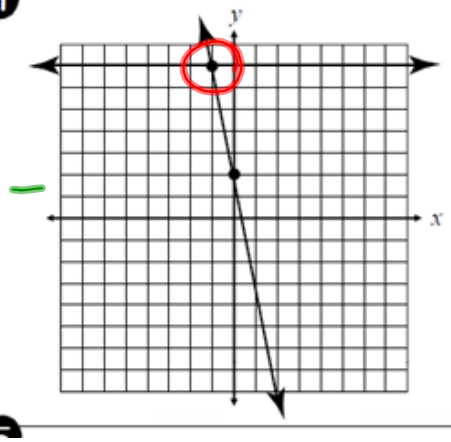
3



System of Equations:

Solution: (6, -5)

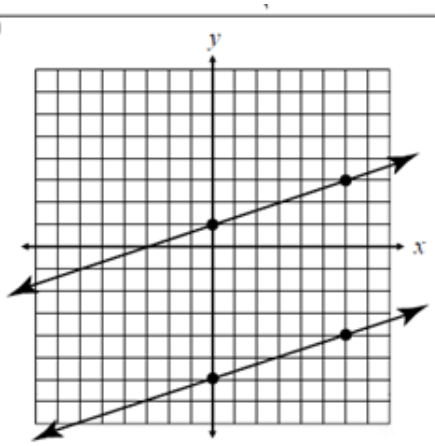
4



System of Equations:

Solution: (-1, 7)

5

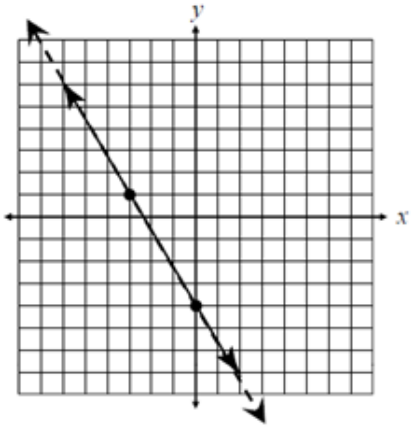


Don't Cross

System of Equations:

Solution: None

6



Same Line

System of Equations:

Solution: ∞

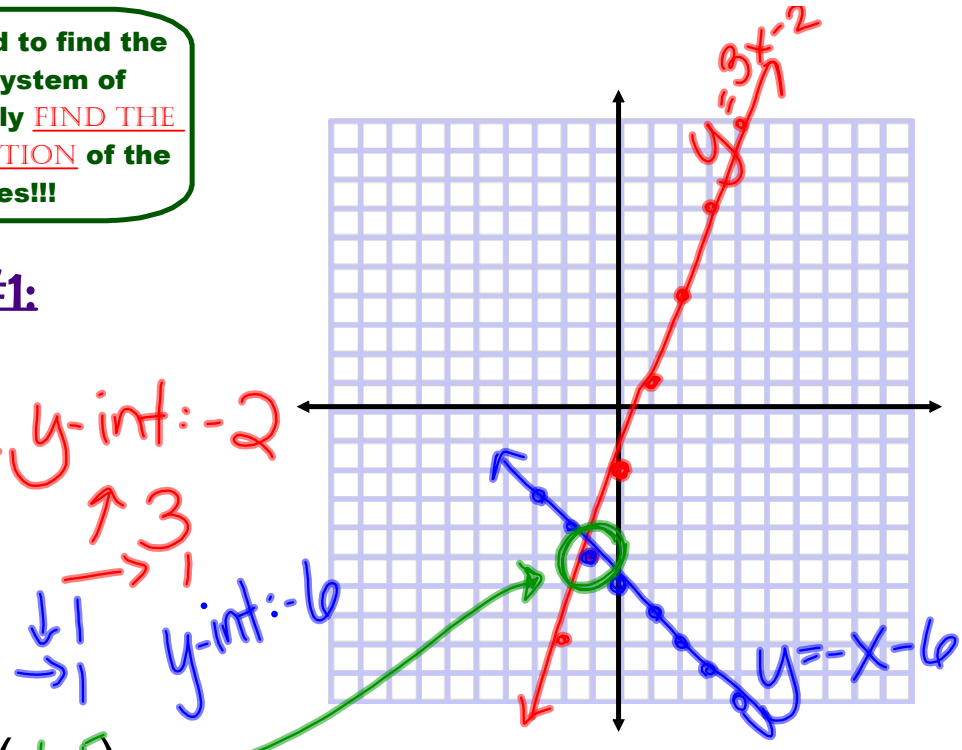
When you are asked to find the SOLUTION to a system of equations, you simply FIND THE POINT OF INTERSECTION of the two lines!!!

Example #1:

Graph:

$y = 3x - 2$

$y = -x - 6$



Solution: (-1, -5)

Name: _____

Score: _____/6

EXIT TICKET

(Solving Linear Systems Graphically)

*tear this page off and

turn it in before you

leave class today*

Solve the following system of equations graphically

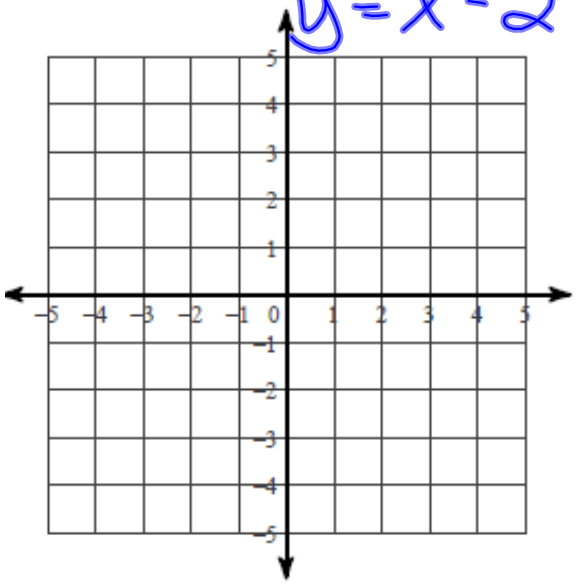
(i.e. find the point of intersection)

$y = 4x + 1$

$y = x - 2$

$y = 4x + 1$

$y = x - 2$



Solution:

(____,____)