Today's Plan:

Learning Target (standard): I will solve a linear system using the substitution method. I will describe the type of system and its solution.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

NAME _____ #57

0:03:00

BELL RINGER

.) Simplify $(x^3)^2$. $= x^6$

2.) Make an input-output table for the function $y = -2x + 1$. Use 0, 1, 2, and 3 as the domain.

(t-chart)

$y=-2(0)+1$

$y=-2(1)+1$

$y=-2(2)+1$

$y=-2(3)+1$

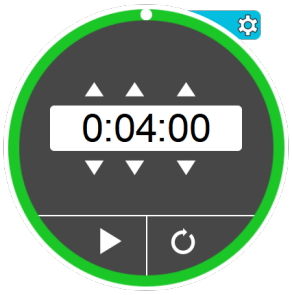
x	y
0	1
1	-1
2	-3
3	-5

3.) Solve x/8 = −3 using mental math.

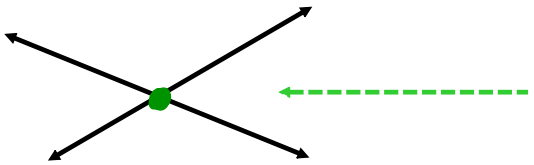
$8\left[\frac{x}{8}=-3\right]$

$x = -24$

On the back of your bell ringer, describe the 3 types of systems and their solutions. Draw a diagram for each type to help support your descriptions.



- Independent System - the lines intersect at one point



solution (x, y)

* different slopes

- Dependent System - the lines are actually the same

* same slopes and *y*-intercepts

- Inconsistent System - the lines are parallel

* same slope with different *y*-intercepts

Solve using the graphing method.

① $2x+3y=6$ $3y=-2x+6$

② $2x-y=-2$ $y=-\frac{2}{3}x+2$

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

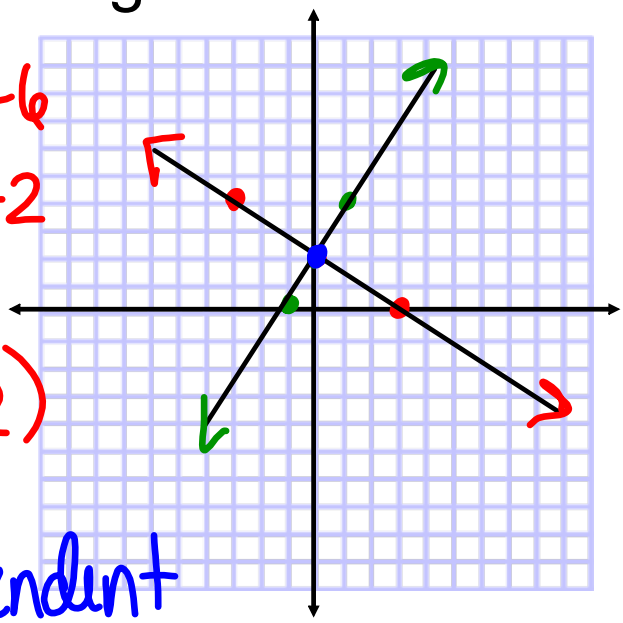
$y=2x+2$ $I_y:(0,2)$

$m=2$

$I_y:(0,2)$

independent

$(0,2)$



Solve using the graphing method.

① $3x+y=-3$ $y=-3x-3$

② $x-y=-1$ $m=-3$

$-y=-x-1$ $I_y:(0,-3)$

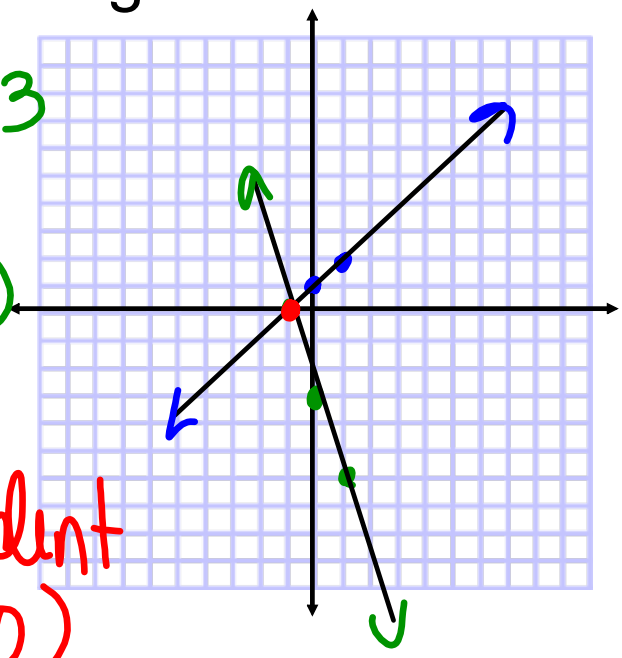
$y=x+1$

$m=1$

independent

$I_y:(0,1)$

$(-1,0)$



The Substitution Method:

- the second method for solving systems of equations
- solve one of the equations for one of the variables - choose the variable that does not have a coefficient or the coefficient divides evenly to all of the other terms
- substitute this into the other equation
- solve this new equation
- use one of the equations and the value you now have to find the missing value

The Substitution Method:

- Types of systems of equations
  - Independent - you can solve for one variable

    (x,y) $x = \#$ or $y = \#$
  - Dependent - variables cancel out and you have a true statement

    infinite solutions $2 = 2$ $-3 = -3$ $9 = 9$
  - Inconsistent - variables cancel out and you have a false statement

    no solution $2 = 4$ $-3 = 6$ $9 = -4$

Solve the system using the substitution method.

$2x + 3y = 6$

$2x - y = -2$

$-2x \quad -2x$

$-y = -2x - 2$

$y = 2x + 2$

$y = 2(0) + 2$

$y = 2$

$2x + 3(2x+2) = 6$

$2x + 6x + 6 = 6$

$8x + 6 = 6$

$8x = 0$

$x = 0$

independent

(0, 2)

Solve the system using the substitution method.

$x - 3y = -3$

$5x - 3y = 9$

$x = 3y - 3$

$x = 3(2) - 3$

$x = 6 - 3$

$x = 3$

$5(3y-3) - 3y = 9$

$15y - 15 - 3y = 9$

$12y - 15 = 9$

$12y = 24$

$y = 2$

independent

(3, 2)

Solve the system using the substitution method.

$3x + y = -3$

$x - y = -1$

$+y \quad +y$

$x = y - 1$

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

$3y-3+y=-3$

$4y-3=-3$

$4y=0$

$y=0$

$x=0-1$

$x=-1$

independent

$(-1, 0)$

Assignment:

Substitution Method

#1,3,4,5,7,8