Today's Plan:

Learning Target (standard): I will solve linear systems using the elimination method.

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.

p.470 #28-56 (by 4)

$28) independent(-1,4)$

$32) independent(1,5)$

$36) independent\left(\frac{2}{3},-1\right)$

$40) independent(-2,-1)$

$44) independent(4,-4)$

$48) independent(-3,1)$

$52) independent\left(\frac{1}{2},-2\right)$

$56) independent(-1,5)$

Solve using the graphing method.

① $2x + y = -3$ $y=-2x-3$ $m=-2$ $I_y: (0,-3)$

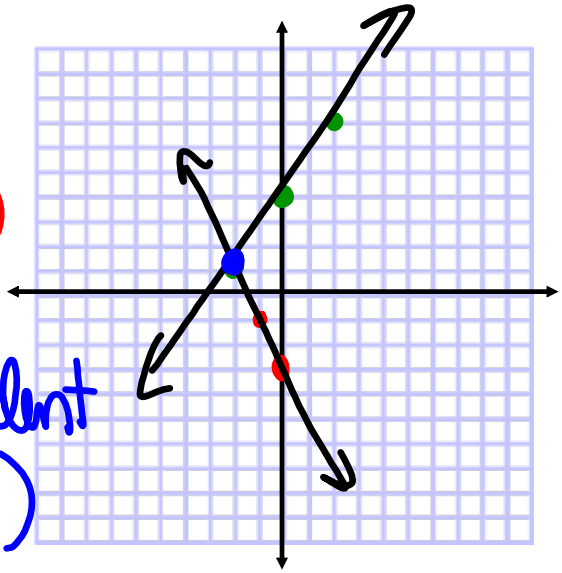
② $3x - 2y = -8$

$-2y=-3x-8$

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

$m=\frac{3}{2}$

$I_y: (0,4)$



independent

$(-2,1)$

Solve using the substitution method.

$8x - 2y = 20$ $-2y=-8x+20$

$5x + 2y = -7$ $y=4x-10$

$y=4(1)-10$

$=4-10$

$y=-6$

$5x+2(4x-10)=-7$

$5x+8x-20=-7$

$13x=13$

$x=1$

independent

$(1,-6)$

Solve using the graphing method.

① $x - 3y = -9$ $-3y = -x - 9$

$y = \frac{1}{3}x + 3$

$m = \frac{1}{3}$

$I_y: (0,3)$

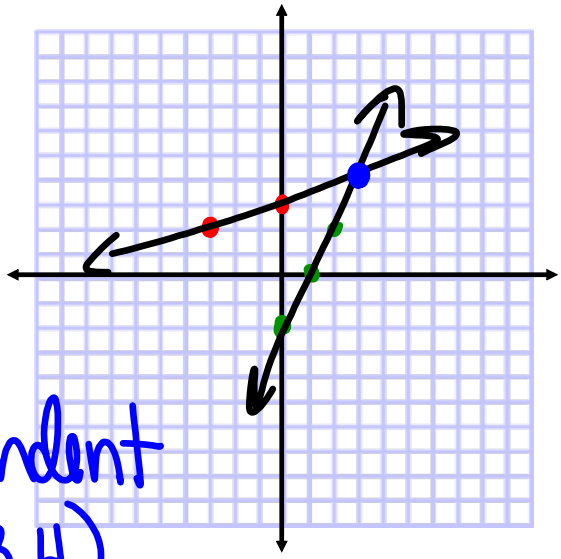
② $2x - y = 2$

$-y = -2x + 2$

$y = 2x - 2$

$m = 2$

$I_y: (0,-2)$



independent

(3,4)

Solve using the substitution method.

$-8x - 8y = -24$ $-8x = 8y - 24$

$-2x - 7y = -21$ $x = -y + 3$

$x = -3 + 3$

$x = 0$

$-2(-y+3) - 7y = -21$

$2y - 6 - 7y = -21$

$-5y = -15$

$y = 3$

independent

(0,3)

Solve using the graphing method.

① $x - y = -4$ $-y = -x - 4$

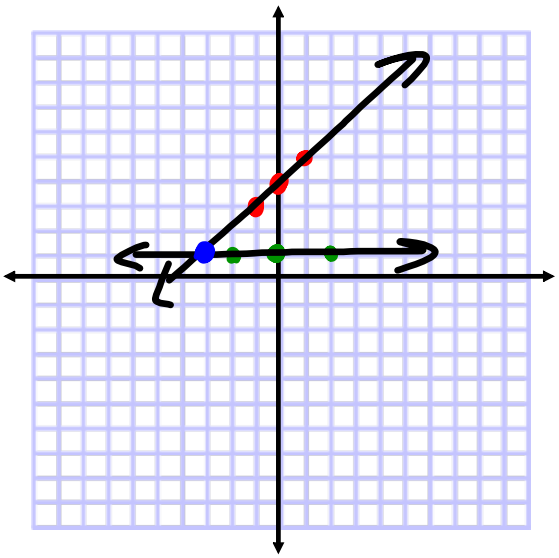
$y = x + 4$

$m = 1$

$I_y: (0,4)$

② $y = 1$

$I_y: (0,1)$



independent

$(-3,1)$

Solve using the substitution method.

$-23 - 4x = -9y$

$-9x = -21 + 4y$

$x = \frac{-21}{-9} + \frac{4}{-9}y$

$x = \frac{7}{3} - \frac{4}{9}y$

$-23 - 4\left(\frac{7}{3} - \frac{4}{9}y\right) = -9y$

$9\left[-23 - \frac{28}{3} + \frac{16}{9}y = -9y\right]$

$-207 - 84 + 16y = -81y$

$-291 = -97y$

$y = 3$

$x = \frac{7}{3} - \frac{4}{9}(3)$

$x = \frac{7}{3} - \frac{4}{3}$

$x = 1$

independent

$(1,3)$

Elimination Method:

- equations should be in standard form Ax + By = C
- choose one variable to be eliminated
- get the coefficients on that variable to be additive inverses of one another
- add the equations so that the variable is eliminated

Types of Systems using the Elimination Method:

- Independent - either variable can be solved for and a real value is the result
  (x,y) x = 3 or y = -5
- Inconsistent - a false statement results with no variables present
  -3 = 6 or 0 = 2 no solution
- Dependent - a true statement results with no variables present
  7 = 7 or -1 = -1 infinite solutions

Solve using the elimination method.

$$3x+7y=16$$
$$4x-3y=9$$

$4(3x+7y=16)$
$-3(4x-3y=9)$

12 21

$12x+28y=64$
$-12x+9y=-27$

$37y=37$

$y=1$

$4x-3(1)=9$

$4x-3=9$

$4x=12$

$x=3$

independent

$(3,1)$

Solve using the elimination method.

$$-10y+10x=0$$
$$2-4y=-6x$$

$2(10x-10y=0)$
$-5(6x-4y=-2)$

$20x-20y=0$
$-30x+20y=10$

$-10x=10$

$x=-1$

$2-4y=-6(-1)$

$2-4y=6$

$-4y=4$

$y=-1$

independent

$(-1,-1)$

Solve using the elimination method.

$$6\left(\frac{5}{6}x+\frac{1}{3}y=\frac{4}{3}\right) \quad 3(5x+2y=8)$$
$$6\left(\frac{2}{3}x-\frac{1}{2}y=\frac{11}{6}\right) \quad 2(4x-3y=11)$$

$15x+6y=24$
$8x-6y=22$
$23x=46$
$x=2$

independent
$(2,-1)$

$4(2)-3y=11$
$8-3y=11$
$-3y=3$
$y=-1$

Assignment:

p.480 #4-36 (by 4)