

## Today's Plan:

**Learning Target (standard):** I will solve linear systems using the graphing method, substitution & 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 and complete practice problems over new concepts.

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

**Assessment:** Board work, homework check and homework assignment

**Differentiation:** Students will work at the board, go over and correct homework at their seats and actively engage in reviewing methods for solving linear systems.

### Systems Practice #1-12

1) *independent*  $(1, -3)$

2) *independent*  $(2, -4)$

3) *independent*  $(-1, 3)$

4) *inconsistent* no solution

5) *independent*  $(5, 8)$

6) *independent*  $(5, -5)$

7) *dependent* infinite solutions

8) *independent*  $(4, 0)$

9) *independent*  $(0, 1)$

10) *independent*  $(1, -3)$

11) *independent*  $(0, 3, 0)$

12) *independent*  $(1, -1, 4)$

Solve using the graphing method.

①  $-1 + 2x - y = 0$   $-y = -2x + 1$

②  $y - 2x = 3$

$y = 2x + 3$

$m = 2$

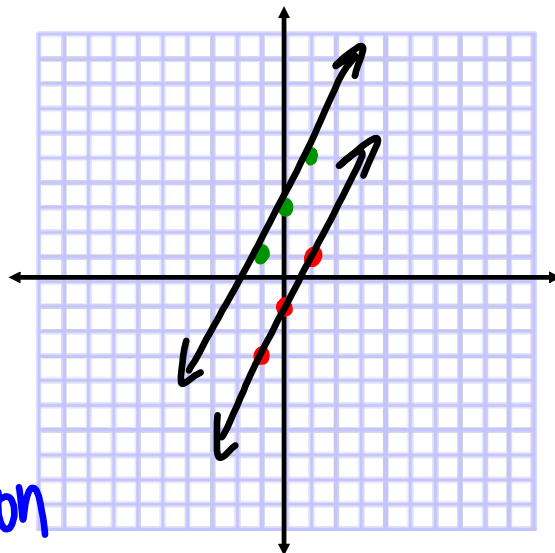
$Iy: (0, 3)$

$y = 2x - 1$

$m = 2$

$Iy: (0, -1)$

inconsistent  
no solution



Solve using substitution.

~~$-6x - 2y = 22$~~

$-5x - 2y = 18$

$-2y = 6x + 22$

$y = -3x - 11$

$y = -3(-4) - 11$   
 $y = 12 - 11$

$-5x - 2(-3x - 11) = 18$

$-5x + 6x + 22 = 18$

$x + 22 = 18$

$x = -4$

independent  
 $(-4, 1)$

Solve using elimination.

$$\begin{array}{r} 7(2x + 5y = 0) \\ -2(7x + 6y = 23) \end{array}$$

$$\begin{array}{r} 14x + 35y = 0 \\ -14x - 12y = -46 \\ \hline \end{array}$$

$$\begin{array}{r} 2x - 10 = 0 \\ 2x = 10 \\ x = 5 \end{array}$$

$$\begin{array}{r} 23y = -46 \\ y = -2 \end{array}$$

independent  
(5, -2)

Solve using elimination.

$$\begin{array}{r} a - 4b + 3c = -16 \\ 6a + 5b - 3c = -4 \\ 3(6a - 3b + c = -24) \end{array} \quad \begin{array}{r} a - 4b + 3c = -16 \\ 6a + 5b - 3c = -4 \\ 18a - 9b + 3c = -72 \end{array} \begin{array}{l} > + \\ > + \\ > + \end{array}$$

$$\begin{array}{r} 4(7a + b = -20) \\ 24a - 4b = -76 \end{array} \quad \begin{array}{r} 28a + 4b = -80 \\ 24a - 4b = -76 \\ \hline \end{array}$$

independent  
(-3, 1, -3)

$$\begin{array}{r} 52a = -156 \\ a = -3 \end{array}$$

$$\begin{array}{r} -21 + b = -20 \\ b = 1 \end{array}$$

$$-3 - 4 + 3c = -16$$

$$-7 + 3c = -16$$

$$3c = -9$$

$$c = -3$$

Solve using the graphing method.

①  $-6 - 3y = -5x$      $-3y = -5x + 6$

②  $-x = -12 + 3y$      $y = \frac{5}{3}x - 2$

$3y = -x + 12$

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

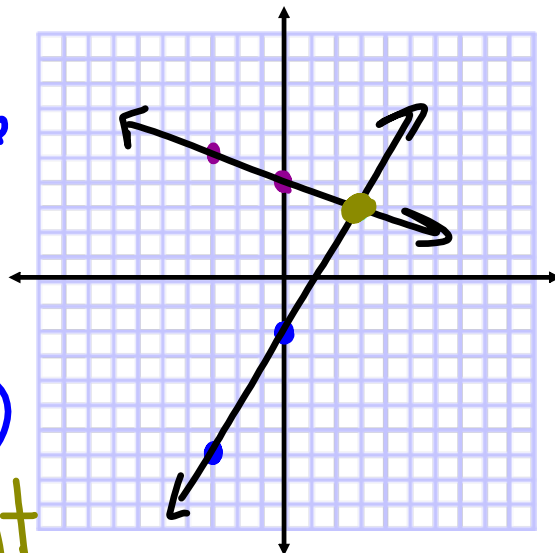
$m = -\frac{1}{3}$

I<sub>y</sub>: (0, 4)

$m = \frac{5}{3}$

I<sub>y</sub>: (0, -2)

independent  
(3, 3)



Solve using substitution.

~~$-4x - 8y = 0$~~      $-4x = 8y$

$-x + 5y = -14$

$x = -2y$

$x = -2(-2)$   
 $x = 4$

$-(-2y) + 5y = -14$

$2y + 5y = -14$

$7y = -14$

$y = -2$

independent  
(4, -2)

Solve using elimination.

$$\begin{matrix} 5(4x - 5y = 24) \\ 2(-10x + 3y = 16) \end{matrix}$$

$$\begin{matrix} 20x - 25y = 120 \\ -20x + 6y = 32 \end{matrix}$$


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$$\begin{matrix} 4x + 40 = 24 \\ 4x = -16 \\ x = -4 \end{matrix}$$

independent  
 $(-4, -8)$

$$\begin{matrix} -19y = 152 \\ y = -8 \end{matrix}$$

Solve using elimination.

$$\begin{matrix} 2(-4a - 4b - 6c = -28) \\ -3(-a + 5b - 4c = -16) \\ 2(-3a + 6b - 6c = -21) \end{matrix}$$

$$\begin{matrix} -8a - 8b - 12c = -56 \\ 3a - 15b + 12c = 48 > + \\ -6a + 12b - 12c = -42 > + \end{matrix}$$

$$\begin{matrix} 3(-5a - 23b = -8) \\ -5(-3a - 3b = 6) \end{matrix}$$

$$\begin{matrix} -15a - 69b = -24 \\ 15a + 15b = -30 \end{matrix}$$


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$$-54b = -54$$

independent  
 $(-3, 1, 6)$

$$\begin{matrix} -3a - 3 = 6 \\ -3a = 9 \\ a = -3 \end{matrix}$$

$$\begin{matrix} 9 + 6 - 6c = -21 \\ 15 - 6c = -21 \\ -6c = -36 \\ c = 6 \end{matrix}$$

## Assignment:

### Systems Review #1-8

**\*TEST tomorrow!\***

#### Systems Review #1-8

- 1) *independent*  $(-4, 3)$
- 2) *inconsistent* no solution
- 3) *independent*  $(-1, -2)$
- 4) *dependent* infinite solutions
- 5) *independent*  $(-3, 2)$
- 6) *independent*  $(2, 4)$
- 7) *independent*  $(-5, 3, -4)$
- 8) *independent*  $(-2, -4, 3)$