

December 9th

Due Today: hw 5.5

## Unit 5: Linear Systems

## Lesson 5.6: When to use each method: Solving Systems Algebraically

Check your answers to HW 5.5:

1)  $(-5, 5)$   
5)  $(-10, -4)$

2)  $(0, 5)$   
6)  $(2, -1)$

3)  $(2, 0)$   
7)  $(-5, -8)$

4)  $(1, -10)$   
8)  $(-1, 2)$

$$\frac{10}{21} = 0.476 \dots \quad 48\%$$

$$\textcircled{5} \quad 2x - 12y = 28$$
$$2(3x - 6y = -6)$$

$$\begin{array}{r} 2x - 12y = 28 \\ \underline{-6x + 12y = -12} \\ -4x \qquad = 40 \\ \underline{-4} \qquad \underline{-4} \end{array}$$

$$\textcircled{x = -10}$$

Same  
Subtract

$$\begin{array}{r} \textcircled{4} \quad 10x + 2y = -10 \\ + \quad 3x - 2y = 23 \\ \hline 13x = 13 \\ \frac{13x}{13} = \frac{13}{13} \\ \textcircled{x=1} \end{array}$$

## HW Review

**Elimination- You must STACK the like terms**

$$\begin{array}{r} 2x + 3 = -y + 1 \\ 5 - x + 2y = -3x - 1 \end{array}$$



$$\begin{array}{r} 2x + y = -2 \\ 2x + 2y = -6 \end{array}$$

$$ax + by = c$$

## Special Cases:

if you get:

$$x = x$$

$$7 = 7$$

$$2y = 2y$$

Then...

*infinite solutions*

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*No Solutions*

$$7 = 2$$

$$0 = 5$$

$$\begin{aligned} 3x + 4y &= -9 \\ -4x - 2y &= 22 \end{aligned}$$

Substitution

$$\begin{aligned} &\begin{array}{r} 3x + 4y = -9 \\ -4x - 2y = 22 \end{array} \\ &\quad \begin{array}{r} +4x \quad +4x \\ \hline -2y = 4x + 22 \\ \quad -2 \quad \quad -2 \\ \hline y = -2x - 11 \end{array} \\ &3x + 4(-2x - 11) = -9 \\ &\quad \begin{array}{r} 3x - 8x - 44 = -9 \\ -5x - 44 = -9 \\ \quad +44 \quad +44 \\ \hline -5x = +35 \\ \quad -5 \quad \quad -5 \\ \hline x = -7 \end{array} \\ &y = -2x - 11 \\ &\quad = -2(-7) - 11 \\ &\quad = 14 - 11 \\ &\quad y = 3 \\ &\boxed{\begin{array}{l} x = -7 \\ y = 3 \end{array}} \end{aligned}$$

Elimination

$$\begin{aligned} &\begin{array}{r} 3x + 4y = -9 \\ -4x - 2y = 22 \end{array} \\ &\quad \begin{array}{r} 2(-4x - 2y = 22) \\ \hline 3x + 4y = -9 \\ + -8x - 4y = 44 \\ \hline -5x = 35 \\ \quad -5 \quad \quad -5 \\ \hline x = -7 \end{array} \\ &3(-7) + 4y = -9 \\ &\quad \begin{array}{r} -21 + 4y = -9 \\ +21 \quad \quad +21 \\ \hline 4y = 12 \\ \quad 4 \quad \quad 4 \\ \hline y = 3 \end{array} \\ &\boxed{\begin{array}{l} x = -7 \\ y = 3 \end{array}} \end{aligned}$$

## Choosing the appropriate method...

$$\begin{array}{l} 1) \quad 5x - 4y = -21 \\ \quad 5x - 9y = 9 \end{array}$$

elimination - Sub

$$\begin{array}{l} 2) \quad -7x - 8y = 20 \\ \quad x - 5y = -9 \end{array}$$

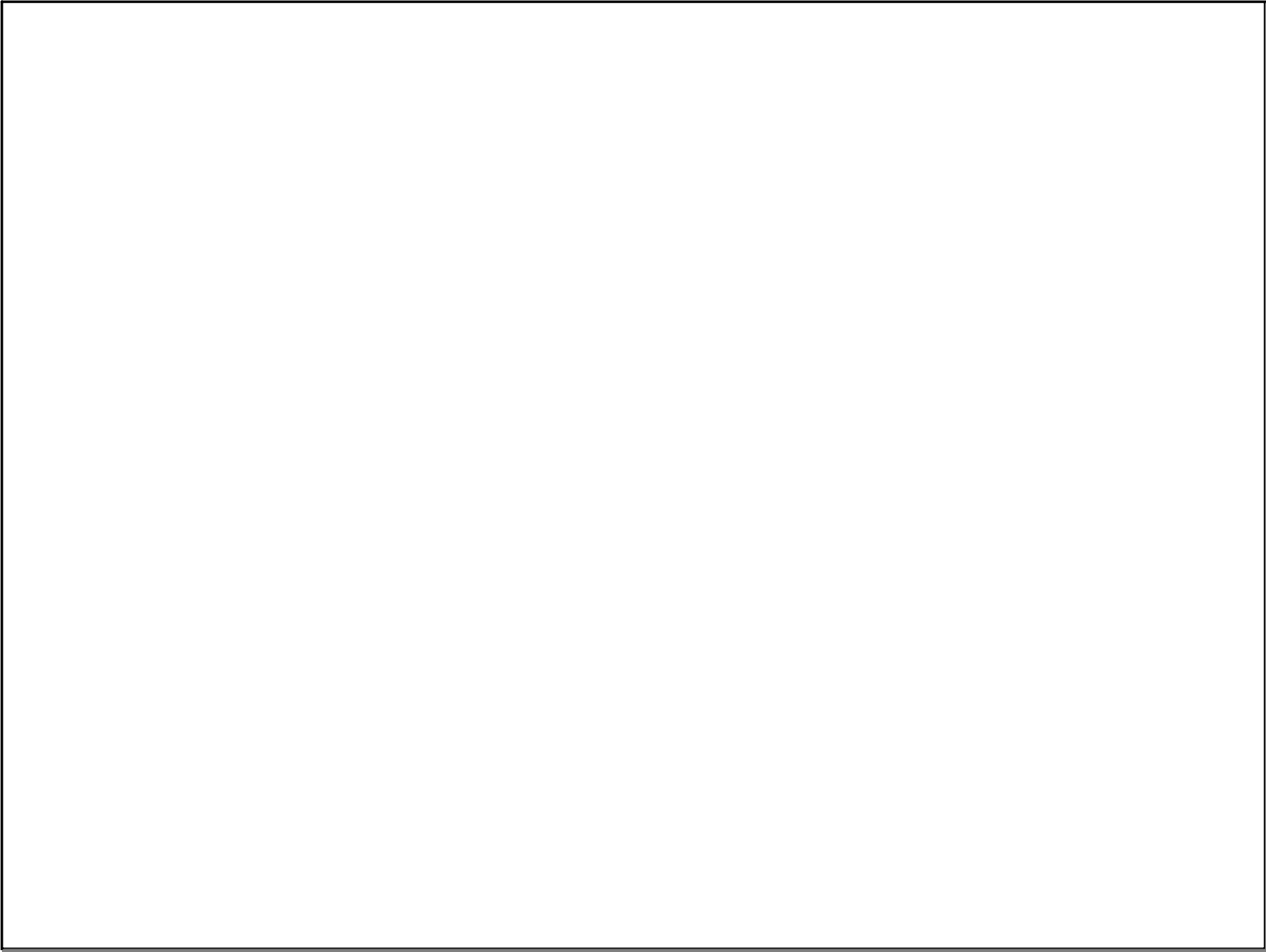
Substitution

$$\begin{array}{l} 3) \quad 2x + 4y = 24 \\ \quad 3x - 2y = 4 \end{array}$$

elimination  
Subst.

$$\begin{array}{l} 4) \quad 3x + 6y = 7 \\ \quad -3x - 6y = -6 \end{array}$$

elimination +



| Unit 5: LINEAR SYSTEMS |                                                |       |                                                |
|------------------------|------------------------------------------------|-------|------------------------------------------------|
| Lesson #               | Name                                           | Recap | HW                                             |
| 5.1                    | Graphically Solving Systems                    |       | Video 5.1<br>NOTES<br>HW 5.1                   |
| 5.2                    | More Graphing Systems                          |       | HW 5.2<br>quiz tomorrow!                       |
| 5.3                    | Quiz + Calc. systems                           |       | 5.3 Delta Math                                 |
| 5.4                    | Algebraically Solving Systems-<br>SUBSTITUTION |       | 5.4 hw<br>* unit 4 corrections                 |
| 5.5                    | Algebraic Solutions-<br>ELIMINATION            |       | HW 5.5                                         |
| 5.6                    | Which Method to use?                           |       | HW 5.6 (Review Videos)<br><u>Quiz tomorrow</u> |
|                        |                                                |       |                                                |
|                        |                                                |       |                                                |
|                        |                                                |       |                                                |