Warm Up

Week 5

Solve by graphing.

$x + y = 2$

$3x - y = -6$

$-3x \quad -3x$

$-y = -3x - 6$

$\frac{-y}{-1} = \frac{-3x}{-1} - \frac{6}{-1}$

$y = 3x + 6$

$m = 3$

$b = 6$

$x + y = 2$

$-x \quad -x$

$y = -x + 2$

$m = -1$

$b = 2$

$(-1, 3)$

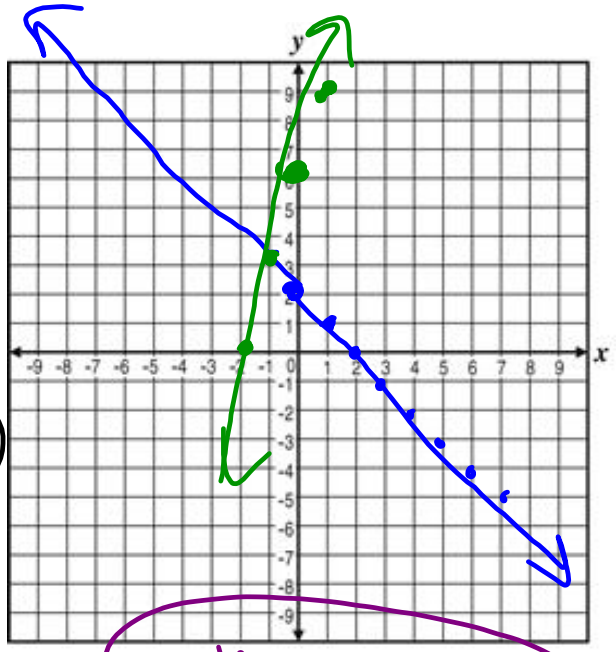
$x \quad y$

$-1 + 3 = 2$

$2 = 2 \checkmark$

$3(-1) - 3 = -6$

$-6 = -6 \checkmark$



$\therefore$ yes, $(-1, 3)$ is soln

Finish Quiz

$m =$

$b =$

2 Graphs

(x, y) $\checkmark$ $\checkmark$

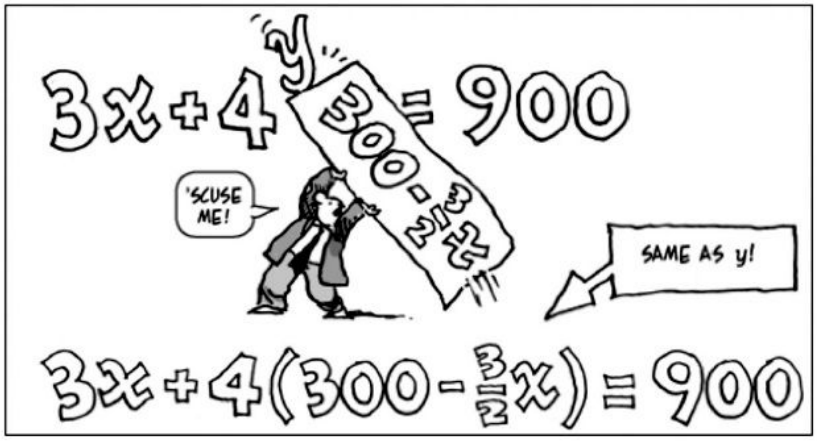
7.1 Graphing Systems wkst

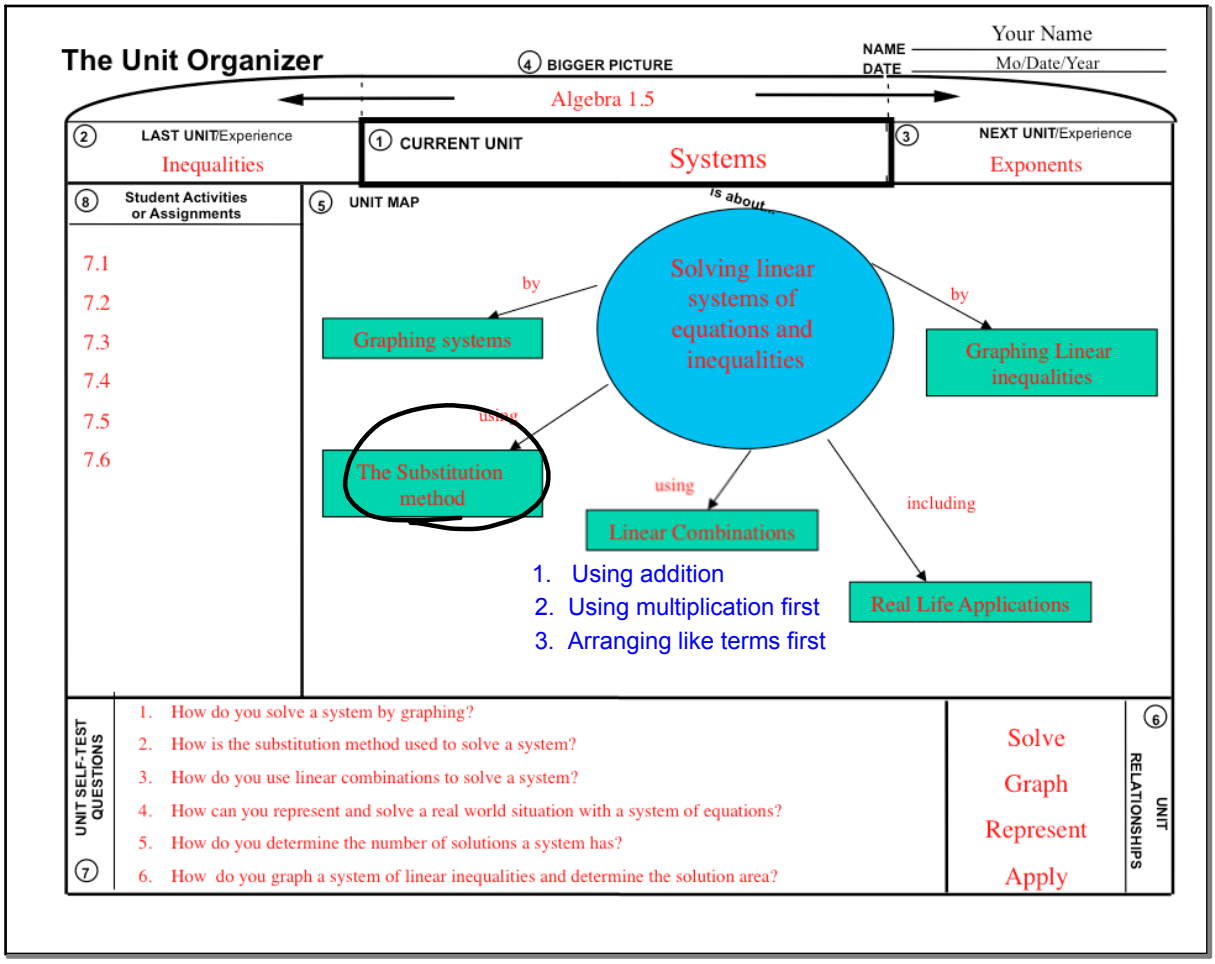
#1 – 12

7.2 Solving Linear Systems by Substitution

Goals: • Solve a linear system by substitution.

EQ: Write the steps for solving by substitution.




The Unit Organizer
Your Name
NAME
DATE
Mo/Date/Year
4 BIGGER PICTURE
Algebra 1.5
2 LAST UNIT/Experience
Inequalities
1 CURRENT UNIT
Systems
3 NEXT UNIT/Experience
Exponents
8 Student Activities or Assignments
7.1
7.2
7.3
7.4
7.5
7.6
5 UNIT MAP
is about...
Solving linear systems of equations and inequalities
by
Graphing systems
by
Graphing Linear inequalities
using
The Substitution method
using
Linear Combinations
including
Real Life Applications
1. Using addition
2. Using multiplication first
3. Arranging like terms first
UNIT SELF-TEST QUESTIONS
7
1. How do you solve a system by graphing?
2. How is the substitution method used to solve a system?
3. How do you use linear combinations to solve a system?
4. How can you represent and solve a real world situation with a system of equations?
5. How do you determine the number of solutions a system has?
6. How do you graph a system of linear inequalities and determine the solution area?
6
UNIT RELATIONSHIPS
Solve
Graph
Represent
Apply

Substitution Method: A method to algebraically solve a linear system.

1) Solve one of the equations for one of its variables.

2) Substitute the expression from Step 1 into the other equation and solve for the other variable.

3) Substitute the value from Step 2 into the revised equation from Step 1 and solve.

4) Check the solution in each of the original equations.

Use substitution to solve the linear system.

Sub.

a) $x = -2y + 6$

$3x - 2y = 2$

$x = -2(2) + 6$

$x = -4 + 6$

$x = 2$

Working

$3(-2y+6) - 2y = 2$

$-6y + 18 - 2y = 2$

$-8y + 18 = 2$

$-18 \quad -18$

$\frac{-8y}{-8} = \frac{-16}{-8}$

$y = 2$

$(2, 2)$

(x, y)

$3x - 2y = 2$

$3(2) - 2(2) = 2$

$6 - 4 = 2$

$2 = 2$ ✓

∴ yes, (2,2) is soln

b) $y = (7 - 4x)$

$2x + 5y = -1$

$2x+5(7-4x)=-1$

$2x+35-20x=-1$

$-18x+35=-1$

$-35 \quad -35$

$\frac{-18x}{-18} = \frac{-36}{-18}$

$x=2$

$y=7-4(2)$

$=7-8$

$y=-1$

$(2, -1)$

$2(2)+5(-1)=-1$

$4-5=-1$

$-1=-1$ ✓

∴ yes, $(2,-1)$ is soln

c) $2x - 4y = 6$

$x = (-3y + 3)$

$x=-3(0)+3$

$x=3$

$(3, 0)$

$2x-4y=6$

$2(3)-4(0)=6$

$6=6$ ✓

$2(-3y+3)-4y=6$

$-6y+6-4y=6$

$-10y+6=6$

$-6 \quad -6$

$\frac{-10y}{-10} = \frac{0}{-10}$

$y=0$

∴ yes, $(3,0)$ is soln.

7.1 Homework

Algebra Concepts Substitution wkst #1-6

d) $y = x - 1$

$x - 5y = -15$

SUMMARY

EQ: Write the steps for solving by substitution in your own words.