

A. Lesson Context

BIG PICTURE of this UNIT:	<ul style="list-style-type: none"> • What is meant by the term FUNCTIONS and how do we work with them? • mastery with working with basics & applications of linear functions • mastery with working with basics & applications of linear systems • understanding basics of function concepts and apply them to lines & linear systems 		
CONTEXT of this LESSON:	<p>Where we've been</p> <p>In Lessons 7 & 8, you practiced solving linear systems graphically & algebraically</p>	<p>Where we are</p> <p>Writing equations for word problems involving 2 unknowns & using algebraic methods for solving systems</p>	<p>Where we are heading</p> <p>How do we apply the concept of "functions" to linear relations.</p>

B. Lesson Objectives

- a. Match pairs of equations to word problems to model real world scenarios involving two unknowns.
- b. Reviewing algebraic methods for solving simultaneous linear equations (elimination & substitution)

C. Fast Five:

Use the substitution method to solve for x & y in this system: $L_1: 2x - 5y = 17$ and $L_2: x + 2y = 4$.

Use the elimination method to solve for x & y in this system: $L_1: -3x + 6y = 21$ and $L_2: 2x + 5y = -11$.

D. Equation Writing: Matching Activity

You are given 16 word problems and then 16 pairs of equations. Your groups task is to:

- a. Define variables that should be used to define your unknowns
- b. Match up the appropriate word problem with its appropriate pair of equations
- c. Decide on which algebraic method (elimination or substitution) would be MOST appropriate in solving the system.

Record your definitions of variables & matching results & method to be used on the following table:

Matches	What will x represent?	What will y represent?	Method?
1 →			
2 →			
3 →			
4 →			
5 →			
6 →			
7 →			
8 →			
9 →			
10 →			
11 →			
12 →			
13 →			
14 →			
15 →			
16 →			

E. Linear Systems: Algebraic & Graphic Solutions

Let's return to our Fast Five:

Use the substitution method to solve for x & y in this system: $L_1: 2x - 5y = 17$ and $L_2: x + 2y = 4$.

(a) Mr S. wants to ALGEBRAICALLY test if the point $(-4,5)$ is the intersection point. Verify whether or not this is true.

(b) Use your graphing calculator to GRAPHICALLY determine the intersection point of L_1 & L_2 .

(c) Prepare a properly labelled & presented sketch, showing the solution to the system.

(d) Use your calculator's PLYSMLT2 APP to solve the system.

Use the elimination method to solve for x & y in this system: $L_1: -3x + 6y = 21$ and $L_2: 2x + 5y = -11$.

(a) Mr S. wants to ALGEBRAICALLY test if the point $(2,-3)$ is the intersection point. Verify whether or not this is true.

(b) Use your graphing calculator to GRAPHICALLY determine the intersection point of L_1 & L_2 .

(c) Prepare a properly labelled & presented sketch, showing the solution to the system.

(d) Use your calculator's PLYSMLT2 APP to solve the system.