SOLVE LINEAR SYSTEMS USING ELIMINATION METHOD

If you have a linear system, you can solve it by adding or subtracting the equations in order to eliminate a variable.

Steps: 1) Add or subtract the 2 equations so that you eliminate either of the variables "x" or "y".
2) Find the solution for one variable.
3) Substitute the solution into either of the original equations and solve for the other variable.
4) Write a concluding statement: $\therefore$ the solution is (x, y).

Examples:

1. Solve: $x + 5y = 2$
$x + 3y = -4$

Add or subtract the equations to eliminate one of the variables and then solve:	Solve for the other variable:	Solution:
STACK THE EQUATIONS	**SUBSTITUTE_____**	

2. Solve: $3x - y = -9$
$4x + y = 23$

Add or subtract the equations to eliminate one of the variables and then solve:	Solve for the other variable:	Solution:

Linear Systems: ELIMINATION – Addition or Subtraction?

1. To solve the following linear systems of equations by **elimination,** identify if you would use **addition** or **subtraction** method AND **which variable** you would eliminate first.

Note: you do not have to find the solution to the system.

a) 3x + 8y = -1
-3x + y = -17

To eliminate the variable _____ first,

I would use _____

b) 3x - y = -13
2x - y = -9

To eliminate the variable _____

first,

I would use _____

2. How do you know WHEN to use the addition or subtraction method?

ADD if ...

SUBTRACT if …

***Examples*:**

1. Solve: $4x + 5y = 22$
   $4x + 2y = 16$

Add or subtract the equations to eliminate one of the variables and then solve:	Solve for the other variable:	Solution:

2. Solve: $3x - 5y = -20$
   $4x + 5y = -15$

Add or subtract the equations to eliminate one of the variables and then solve:	Solve for the other variable:	Solution: