Graphic Organizer:
Solving Systems of Equations

Name: _____

$2x - y = -7$

$y = -\frac{1}{2}x + 2$

Substitution

1) Choose an equation and isolate a variable:

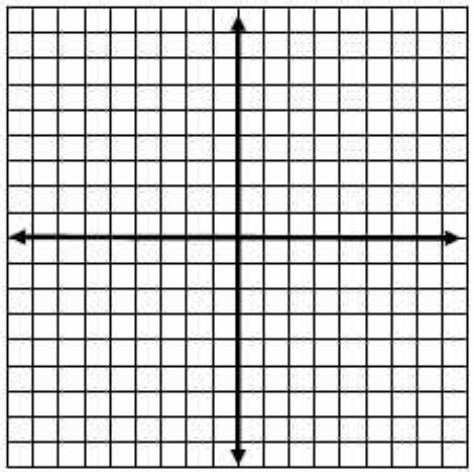
2) Go to the equation not used and substitute for the variable isolated in step 1:

3) Solve for the variable not isolated in step 1:

4) Substitute and solve for the other variable:

Graphing

1) Graph each equation:



Identify the point of intersection:

ANSWER: (_____)

Elimination

1) Stack the equations so like terms are lined up:

2) Goal: make it so coefficients of one of the variables in each equation (either the coefficient in front of x or y) are the same or negatives of each other.
*Modify the equation(s) so that the coefficients are the same or negatives of each other:

3) Add or subtract the equations so that one of the variables is eliminated (or canceled out). Solve for the remaining variable:

4) Substitute the variable just solved for into one of the original equations. Solve for the remaining variable:

ANSWER KEY- Graphic Organizer
Solving Systems of Equations

Name: _____

$2x - y = -7$

$y = -\frac{1}{2}x + 2$

Substitution

1) Choose an equation and isolate a variable:

$y = 2x + 7$

2) Go to the equation not used and substitute for the variable isolated in step 1:

$2x + 7 = -\frac{1}{2}x + 2$

3) Solve for the variable not isolated in step 1:

$-2 = x$

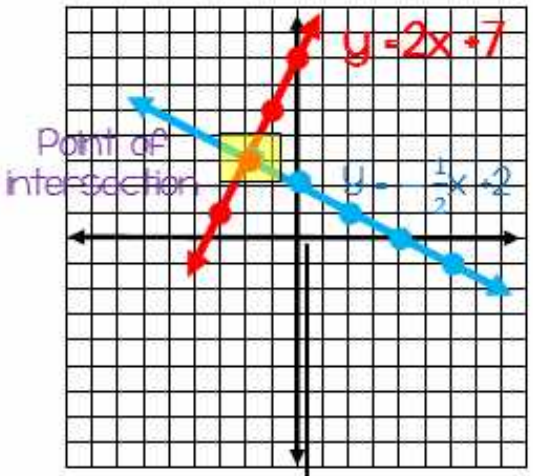
4) Substitute and solve for the other variable:

$y = -\frac{1}{2}(-2) + 2$

$y = 3$

Graphing

1) Graph each equation:



Identify the point of intersection:

(-2, 3)

ANSWER: (-2, 3)

Elimination

1) Stack the equations so like terms are lined up:

$y = 2x + 7$

$y = -\frac{1}{2}x + 2$

2) Goal: make it so coefficients of one of the variables in each equation (either the coefficient in front of x or y) are the same or negatives of each other. *Modify the equation(s) so that the coefficients are the same or negatives of each other:

$y = -\frac{1}{2}x + 2$ MODIFY

$4(y = -\frac{1}{2}x + 2)$

$4y = -2x + 8$

3) Add or subtract the equations so that one of the variables is eliminated (or canceled out). Solve for the remaining variable:

$y = 2x + 7$

$+4y = -2x + 8$

$5y = 15$ $\quad y = 3$

4) Substitute the variable just solved for into one of the original equations. Solve for the remaining variable:

$3 = 2x + 7$

$-4 = 2x$

$-2 = x$