Solving Systems of Equations Match Game

$y = -2$ | $4x - 3y = 18$

$4x = 3y + 18$

$4x =$ | -2 | -2 | -2 | $+18$

STANDARD: TEKS M.A.5.C solve systems of two linear equations with two variables for mathematical and real-world problems.

PLAYERS: 1-4

MATERIALS:

- Complete set of cards (system of equations, modification with one as coefficient) ***HINT- Make each set of cards a different color.***
- Paper and Pencil
- Recording Sheet
- Answer Key (use copies of card sheets before they are cut apart)

DIRECTIONS:

1. Arrange the cards face down in an array so that student pairs can reach them.
2. Have a pair of students turn over one of each color of cards and try to determine if they are a match.
3. Other pairs share whether or not they agree. Discussion is encouraged by the teacher or the Leader.
4. If there is a match, then the pair gets to keep the cards. If there is not a match, then the cards remain face up.
5. When a match of two cards is made, then the two cards may be set in front of the pair.
6. Continue with the remaining cards.

$-2x + y = 11$ $x - y = 2$	$x = y + 2$
$4x - y = 7$ $5x - 8y = 2$	$y = 4x - 7$
$2x + y = 1$ $10x - 4y = 2$	$y = -2x + 1$
$-3x - y = -13$ $x + 2y = 6$	$x = -2y + 6$

$2x + y = 1$ $3x - 3y = 18$	$y = -2x + 1$
$2x - 6y = 4$ $x + 6y = 5$	$x = -6y + 5$
$y - 3x = 5$ $5x - 4y = -3$	$y = 3x + 5$
$-4x + y = 6$ $-5x - y = 21$	$y = 4x + 6$

Solving Systems of Equations MATCH GAME Recording Sheet

Name_____

Directions: Select 7 cards. Write the system of equations in the small box. In the big box, write the steps needed to isolate the variable with a coefficient of 1.

$$-2x + y = 11$$
$$x - y = 2$$

EXAMPLE

STEP 1:

$$x - y = 2$$
$$+y \quad +y$$
$$x = y + 2$$

Steps for Solving Systems of Equations by Substitution

Solve each system by substitution.

Ex) $\begin{cases} x = -2y \\ 3x + 4y = -8 \end{cases}$

Step 1

The variable x is already by itself.

Step 2

$$3x + 4y = -8$$
$$3(-2y) + 4y = -8$$
$$-6y + 4y = -8$$
$$\frac{-2y}{-2} = \frac{-8}{-2}$$
$$y = 4$$

Step 3

$$x = -2y$$
$$x = -2(4)$$
$$x = -8$$
$$\boxed{(-8, 4)}$$

Step 4

$$x = -2y$$
$$(-8) = -2(4)$$
$$-8 = -8 \checkmark$$

$$3x + 4y = -8$$
$$3(-8) + 4(4) = -8$$
$$-24 + 16 = -8$$
$$-8 = -8 \checkmark$$

Steps

1) Solve one of the equations for x or y.
   - This is already done for you for this section.
2) Substitute the expression into the other equation and solve for the variable.
3) Once you solved one for one of the variables, plug this solution into one of the original equations and solve for the other variable.
4) Check your answer by plugging it back into both equations and seeing if it holds true.

Name

Solving Systems of Equations by Substitution

Circle the correct solution. Show your work beside the problem.

A drummer and a guitarist each wrote songs for their band. The guitarist wrote 8 fewer than twice the number of songs that the drummer wrote. They wrote a total of 46 songs.

Which system of equations models this situation if the drummer wrote d songs and the guitarist wrote g songs?

F $g = 2d - 8$
$g + d = 46$

G $g = 8 - 2d$
$g = 46 - d$

H $d = 2g - 8$
$d = 46 - g$

J $d = 8 - 2g$
$d + g = 46$

What is the value of x in the solution to this system of equations?

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

F $\frac{6}{5}$

G -2

H $-\frac{10}{3}$

J 3

Match the system of equations with the modified equation that can be used to solve the system of equations by substitution. Show your work. Select one to solve for x and y.

$$2x + y = 1$$
$$3x - 3y = 18$$

$$x = -6y + 5$$

$$y - 3x = 5$$
$$5x - 4y = -3$$

$$x = -y + 2$$

$$2x - 6y = 4$$
$$x + 6y = 5$$

$$y = 4x + 6$$

$$-4x + y = 6$$
$$-5x - y = 21$$

$$y = -3x + 5$$